



# **BAYERO BUSINESS REVIEW**

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**DEPARTMENT OF BUSINESS MANAGEMENT  
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## **EDITOR-IN-CHIEF NOTE**

### **Chief Editor's Remarks**

It is my pleasure to present Volume 9 (2) (December 2025) of the *Bayero Business Review*. This edition continues our commitment to providing a credible platform for rigorous scholarship and informed discourse in business and management.

In a period marked by rapid technological change, evolving market structures, and economic uncertainties, the role of research-driven insight is increasingly vital. The articles featured in this volume address contemporary issues in strategic management, entrepreneurship, finance, innovation, and organizational development. Collectively, they offer valuable perspectives that advance academic debate while providing practical relevance for managers, policymakers, and industry practitioners.

As a publication of the Department of Business Management, Faculty of Economics and Management Sciences, Bayero University Kano, the journal remains dedicated to upholding high standards of academic integrity, methodological rigor, and intellectual contribution. We continue to encourage interdisciplinary collaboration and research that responds to both local and global business challenges.

I sincerely appreciate the authors for their valuable contributions, the reviewers for their constructive and thorough evaluations, and the editorial team for their commitment to excellence. Their collective efforts ensure the quality and credibility of this publication.

It is our hope that this edition will stimulate further research, inspire innovative thinking, and contribute meaningfully to sustainable economic development.

**Aliyu Mukhtar Daneji Ph.D.**

Chief Editor  
Bayero Business Review  
Department of Business Management  
Faculty of Economics and Management Sciences  
Bayero University Kano, Nigeria

TABLES OF CONTENT

Effect of Corporate Liquidity Management on Financial Performance of Listed Deposit Money Banks in Nigeria: <i>Sani Saminu, Ripiye, Waetsi Bitrus, Hashim Usman Muhammad, Murna Sam-Aleng, Masud Haruna Aminu<sup>5</sup>, Christiana Joshua Samari, Kubuza Ajiduku, Ibrahim Baba Musa &amp; Dauda Ibrahim Dan'asabe</i> .....	1
Debt Financing and Financial Performance of Listed Consumer Goods Firms in Nigeria: <i>Dr. Murtala Abdullahi, Mark Gregory Tagwai, Dr. Isuwa Dauda &amp; Hauwa'u Suleiman</i> .....	22
Effect of Board Diversity on Carbon Emission Disclosure of Listed Energy Companies in Nigeria: <i>Abdulkadir Kayode Ishola, Muhammad Mustapha Bagudo, Ibrahim Yusuf &amp; I. A. Aliyu</i> .....	39
Employee Involvement Culture, Knowledge Infrastructure Capability and Organizational Performance: A Proposed Moderating Framework for Pension Fund Administrators in Nigeria: <i>Idris Dahiru</i> .....	56
Assessment of the Contribution of Legislative Oversight to Public Budget Credibility in Nigeria: <i>Dr Ibrahim Shehu, Engr Bashir Aminu Yero &amp; Dr Yahaya Danzaria Esq</i> .....	76
Environmental Determinants of Entrepreneurship in Nigeria- A Literature Survey: <i>Florence Eguonor Omonzejele (PhD) &amp; Kennedy Oghenesuvwe Obire</i> .....	94
Moderating Role of Socio-Economic Factors on the Relationship Between Entrepreneurial Competencies and Performance of SMEs in Kano State: <i>Abubakar Hamisu Umar PhD, Mansur Sa'id Adamu &amp; Muhammed Alhaji Abubakar PhD</i> .....	109
Impact of Board Independence, Board Risk Management and Board Foreign Diversity on Financial Distress of Manufacturing Firms Listed on The Nigerian Exchange Group: <i>Aliyu Sanusi &amp; Muhammed Alhaji Abubakar</i> .....	131
The Cash Flow Conundrum: Exploiting the Impacts of Delaying Accounts Payable on SMEs' Financial Performance in the Post-Covid-19 Pandemic: <i>Salmanulfarisi Abdulrahaman, PhD &amp; Abubakar Mukhtar Yakasai, PhD</i> .....	157
Mobile Banking and Financial Inclusion in Nigeria: Insights From Opay Digital Banking <i>Oyedare, Olufemi Akinloye , Oyedokun, Akintunde Jonathan &amp; Chie, Godson Uzochukwu</i> .....	182

Effect of Operational Management Practices on Performance of Food and Beverage Companies in Kaduna State: <i>Maimuna Ibrahim Barau, Prof. Maryam Abdu, Dr. Yusuf A. Hashim &amp; Aliyu Aminu Abbas</i> .....	211
Digital Trust and Consumer Behavior in High-Risk Markets: Evidence from Northwest Nigeria: <i>Ismail Alhaji Suleiman</i> .....	238
Analyzing the Logistics and Supply Chain Processes in Ports as a Performance Lever for Nigerian Cement and Allied Industries: <i>Oni, Babatope Gabriel &amp; Adeogun, Oludare Akanni</i> .....	254
Moderating Role of Network Convenience on The Relationship Between Customer Satisfaction and Customer Loyalty in Online Business Practice in Nigeria: <i>Hashim Ilyasu, Yahaya Idriss &amp; Muhammad Daudu</i> .....	267

## EFFECT OF CORPORATE LIQUIDITY MANAGEMENT ON FINANCIAL PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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### Abstract

*Financial survivability is threatened in the Nigerian banking sector largely as a result of liquidity mismanagement, which adversely impact on the performance of the banking industry and the economy. This prompted investigation into liquidity management and performance of listed Deposit Money Banks in Nigeria. Secondary data were extracted from the financial report and filters were used to arrive at adjusted population. Longitudinal research design was used using panel regression to analyses twelve (12) sampled listed Deposit Money Banks from the population of fourteen (14) from 2015 to 2023. The correlation result showed that Capital Adequacy Ratio and Loan and Advance Ratio had positive and significant relationship with Return on Asset while Current Ratio had negative but insignificant relationship with Return on Asset. The random effect regression result showed that, Capital Adequacy Ratio had positive and significant effect on Return on Asset of listed Deposit Money Banks in Nigeria. However, Loan Advance Ratio and Current Ratio had negative but insignificant effect on Return on Asset of listed Deposit Money Banks in Nigeria. The study found out that, liquidity management is poor in the above-named firms and it is therefore imperative for the board of directors to constitute a board that will ensure proper utilization of liquidity to achieve the desired profitability.*

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**Keywords:** Capital adequacy ratio, loans and advance ratio and current ratio.

## **1. Introduction**

The banking industry is considered an integral constituent of the economy, given its pivotal role in financial intermediation. Banks mobilise funds from surplus economic units and channel them to deficit units, thereby facilitating investment, production, and economic growth. Funds intermediated by banks globally between 2019 and 2024 grew by approximately US\$122 trillion, driven largely by increased wealth accumulation among institutions and households worldwide (McKinsey & Company, 2025).

The report further noted that, after accounting for risk costs, banks' revenues reached about US\$5.5 trillion in 2024, representing the highest level ever achieved by any industry. This significant milestone further re-echoes the importance of banks to the global economy. In Nigeria, the financial sector, of which the banking industry forms a core component, contributed about 26.5% to Gross Domestic Product (GDP) growth in the 2023 financial year, representing an increase of approximately ₦790 billion, from ₦3.01 trillion to ₦3.8 trillion (National Bureau of Statistics, 2024). Consequently, the banking sector is widely regarded as a catalyst for other sectors of the economy by ensuring the timely and efficient flow of financial resources. Effective liquidity management is therefore imperative in the banking sector, as liquidity reflects the ability of financial institutions to meet obligations

as they fall due and sustain operational viability (Serrasqueiro, Nunes, & Armada, 2016). Adequate liquidity enables banks to honour short-term liabilities, maintain depositor confidence, and support financial performance, which is critical to competitiveness, profitability, and long-term stability (Hameed, Kurfi, & Bello, 2020).

Financial crises have historically led to the distress and eventual collapse of several banks in Nigeria, including Afri Bank, African International Bank, Diamond Bank, and Skye Bank, among others (Wachukwu & Okey-Nwala, 2025; Adenuga et al., 2021). These failures were largely occasioned by banks' inability to prudently manage their liquid assets, as credit facilities were often extended without adequate collateral and sound risk assessment frameworks. Given that banks' financial performance is shaped by the interaction of internal and external operating environments, weaknesses in credit administration and adverse macroeconomic conditions significantly heighten the risk of loan default and deterioration in asset quality (Bello & Umar, 2019). From the relatively small capital base of some banks, unrecovered loans eroded shareholders' funds through accumulated loan losses, ultimately leading to insolvency and bank failure. This aligns with extant evidence that poor cash flow planning, ineffective internal controls, high debt burdens, and unfavourable economic conditions expose firms, particularly smaller and weaker

institutions to financial distress and insolvency (Bello, Bala, & Falola, 2016). In response to the fragile financial condition of banks, the Nigerian government introduced the recapitalisation policy for commercial banks in 2005, which increased the minimum capital base from ₦2 billion to ₦25 billion, intending to strengthen banks' capital adequacy and liquidity positions (Adenuga et al., 2021; Adebayo et al., 2011). The recapitalisation exercise restored a measure of public confidence in the previously ailing banking sector; however, its gains have continued to be challenged by global financial crises, recurrent economic recessions, and persistent inflationary pressures within the Nigerian economy.

Survival and efficient flow of operations within corporate settings is dependent on sound liquidity management. Just like the human body functions with effective blood circulation, so is effective liquidity management an integral element in corporate growth and sustainability. The ability of firms to be able to discharge its obligations as at when due or a firm having just about the right amount of liquidity required to perfect its activities rather than having excessive liquidity shows an effective liquidity management (Wachukwu & Okey-Nwala, 2025). The Deposit Money Banks in Nigeria are financial institutions whose major stock in trade is liquidity. Therefore, financial performance of Listed Deposit Money Banks (DMBs) in Nigeria is tied to effective liquidity management because of

the nature of services they render (financial intermediation from area of surpluses to area of deficits). Performances of DMBs in Nigeria has been somewhat epileptic; with gains and losses (CBN, 2022). This has generated serious attention and interest among; financial economists, investors, and financial analysts, considering the role of listed DMBs in mediating between areas of surpluses and areas of deficits in optimizing sound liquidity. Enhance liquidity management in financial institutions creates an optimized system of liquidity that ensure firms are liquid enough to meet its obligations as at when due, thereby creating ripple effects for economic growth.

Performance of DMBs in Nigeria is significantly connected with financial mediation from area of surpluses to area of needs. By accomplishing this function, funds are collected from the surplus units which can be withdrawn on demand and channeled to the investment units. A bank that is able to meet these obligations will prosper and make profit compared to a bank that is cash crunch. Otekunrin, et al., (2018) asserted that, bank's ability to meeting customers' withdrawal needs and other cash flows is an indication of her liquidity management and that will go a long way in sustaining the bank as a result of the profit it will make from such commitment. However, when a bank is deficient in liquidity, the business environment in which it operates becomes toxic and performance indicators will plummet (Emmanuel & Stephen, 2020).

Bhattacharyya and Sahoo (2011), noted that, liquidity management encompasses maintenance of adequate balances of cash and its equivalent balances so as to meet the needs of the customers as at when due and to also ensure enough cash balance.

Nwokoji (2017) documented that, for effective liquidity management, capital adequacy ratio (CAR) of banks should be within the statutory percentage (8% under Basel II and 10.5% which includes a 2.5% conservation buffer under Basel III). Capital adequacy connotes the bank's ability to maintain equity capital sufficient to pay depositors whenever they demand their money and still have enough funds to increase the bank's assets through additional lending. When a bank has poor CAR, it has strong liquidity challenge and that will affect the performance. Wachukwu & Okey-Nwala, (2025) noted that minimum capital adequacy ratio is essential for banks to have enough cash base to absorb unforeseen losses in case of any eventuality. It is considered critical because they reveal whether banks have enough financial power to absorb a reasonable amount of loss so that they don't become insolvent. This ratio helps in ensuring effectiveness, efficiency and economy by lowering the risk of banks collapsing. A bank with high capital adequacy ratio is considered safe and likely to meet its financial obligations as at when due

Loan and advance to deposit ratio reflects a proportion of customers' deposits given out in form of loans (Emmanuel &

Stephen, 2020). It is imperative for banks not to loan out the entire deposits and remain cash crunched. Adenuga et al., (2021) documented that "...Central Bank of Nigeria (CBN), on July 3, 2019, mandated banks to keep a minimum loan-to-deposit ratio (LDR) (defined as loan to funding ratio) of 60.0 per cent and was later reviewed upward to 65.0 per cent on September 30, 2019 to encourage banks increase consumer, mortgage, and corporate credits ...". The ratio serves as a useful planning and control mechanism in liquidity management since commercial banks use it as a guide in lending and investment, and to make a total evaluation of their expansion program. CBN (2023) asserted that, when the ratio is low, banks are encouraged to lend and invest and vice versa, so as to take some benefit in the form of profitability. Otherwise, too much fund will be idle and banks will lose the benefits associated with investment of the excess funds. In giving out loans and advance, banks must ensure that, a reasonable balance is reached so as not be liquidity deficient or to have excess liquidity that are unproductive.

A readily amount of cash available for discharging statutory duties of banks indicate its liquidity strength. A Q4 Economic report by the Central Bank of Nigeria (2023) documented that, liquidity fell from \$123 million to \$94.2 million, a slip of 23%, raising concerns about the likely stress experienced in the banking sector. The report noted that, excess liquidity comes at a cost to the banks (tying down excess cash instead of

investing) and insufficient liquidity can cause unimaginable disruption to a financial institution's operations and customer's relationship. Prior to the general elections in Nigeria in 2023, Deposit Money Banks in Nigeria experienced acute liquidity problems that almost paralyzed the nation's economic activities beyond a month (Daily Trust News, 2023). Cash crunch almost held the economy to a stand-still as most businesses were grounded which led to reputational damages for banks on social media platforms because of the perceptions citizens have about their supposed unfriendly roles in the currency redesign era. Many businesses went to extinction and some experienced economic downturn as a result of poor liquidity management by banks (CBN Report, 2023). Banks were complicit by taking advantage of a good policy at the expense of the citizenry for personal advantage which led to poor liquidity management that impact the banks adversely (Daily Trust News, 2023).

Listed Deposit Money Bank in Nigeria were bedeviled with; inadequate liquidity reserves, high loan-to deposit ratio, dependence on short-term wholesale funding, ineffective cash management, insufficient bank network for cash distribution, high cash reserve requirement, limited access to Central Bank liquidity facility, risk concentration, inefficient asset-liability management and lack of effective risk management framework (CBN Report, 2023). These arrays of liquidity management problems

have adverse consequences resulting to; loss of confidence, increase in the cost of funding, reduction in the banks' ability to lend and often leads to regulatory sanctions. These issues raised have led to corporate decline, failure and collapse that are evident in the banking industry (Afri Bank, African International Bank, Diamond Bank, Skye bank etc.). Diamond banks struggled and eventually was absorbed by Access bank in 2019 as a result of poor liquidity management that proved fatal (CBN, 2022). Inability of risk committee to objectively scrutinize risk factors and make appropriate recommendations to mitigating liquidity risks has dealt a significant blow to liquidity management in listed DMBs in Nigeria and it came at a huge cost to the banks and depositors. For these reasons, this study examined liquidity management in listed DMBs in Nigeria and firm size was used as a control variable to cushion the effect of variation amongst the banks in terms of their capital bases.

The following questions were asked based on the problems raised.

- i. Does Capital Adequacy ratio have significant effect on the financial performance of listed Deposit Money Banks in Nigeria?
- ii. does Loans and Advances ratio have significant effect on the financial performance of listed Deposit Money Banks in Nigeria?
- iii. does Current ratio have significant effect on the financial performance of listed Deposit Money Banks in Nigeria?

The study seeks to examine the effect of liquidity management on the performance of listed Deposit Money Banks in Nigeria. Specifically, the study seeks to;

- i. To determine the effect of Capital Adequacy ratio on financial performance of listed Deposit Money Banks in Nigeria.
- ii. To determine the effect of Loans and Advances ratio on financial performance of listed Deposit Money Banks in Nigeria.
- iii. To examine the effect of Current ratio on the financial performance of listed Deposit Money Banks in Nigeria.

From the objectives stated, the following hypotheses were formulated in the null form:

H<sub>01</sub>: Capital Adequacy ratio has no significant effect on financial performance of listed deposit money banks in Nigeria.

H<sub>02</sub>: Loans and Advances ratio has no significant effect on financial performance of listed deposit money banks in Nigeria.

H<sub>03</sub>: Current ratio has no significant effect on financial performance of listed deposit money banks in Nigeria.

## **2. Literature Review**

### **2.1 Financial Performance**

Financial Performance, measured by the firm's ability to generate returns, maintain stability and manage risks, generally connotes the financial success and health of a firm. In the banking industry, it can be conceptualized as multidimensional

construct, comprising financial indicators which include; efficiency, profitability and stability (Wachukwu & Okey-Nwala (2025)). For accounting research purposes, the metrics for financial performance measures include; Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM), Operating Efficiency Ratio, Profitability ratios (e.g., Gross Profit Margin, Net Profit Margin) among others. For the purpose of this study, financial performance is operationalized with Return on Asset (ROA because, it generally views performance of firms (returns) in terms of its total asset (Sani & Abdulkarim, 2021). This gives an encompassing reach without excluding key areas in quantification of firms progress or otherwise.

### **2.2 Capital Adequacy Ratio**

Banks as financial institution that mediate the flow of funds from surplus units to deficits units should ensure a sound Capital Adequacy Ratio (CAR) (Waswa, et al., 2018). This ratio measures the capital adequacy level needed to function effectively. It reflects firms' ability to absorb potential losses and maintain financial stability in the event of problem. It forms the components of bank's risk management and financial stability. Otekunrin et al., (2019) asserted that, high CAR is an indication of a bank's ability to withstand potential losses and maintain financial health. If the CAR in banks is high, they stand s chances of less risk be ensuring enough liquidity base to function optimally. On the other hand, lower CAR indicates serious dangers and risks in

banks which is explained by lower liquidity base that adversely affects banks operation.

### **2.3 Loans and Advance Ratio**

Part of the function of banks is to offer loans and advances to those in need so as to stimulate economic activities. Wachukwu and Okey-Nwala (2025) asserted that, the Loan and Advance Ratio (LAR) is a measure of the ratio of a bank's aggregate loans and advances compared to its total deposits. The aggregate loans and advances are put side by side to the total deposits so as to ascertain the banks liquidity position in other to minimize risk and manage its asset. The loans and advances ratio is conceptualized as a measure of a bank's credit risk and liquidity. Poroye and Okolie (2024) documented that, when a firm has a higher LAR, it indicates greater exposure to credit risk and potential liquidity problems which may result in liquidity crunch that can halt the progress of firms. Sathyamoorthi, et al., (2020) noted that, Lower LAR on the other hand creates excess liquidity in firms that are idle, which can lead to significant loss. For effective LAR, firms must ensure it is at optimum point.

### **2.4 Current Ratio**

Firms are always surrounded by obligations. The long-terms obligations are systematic because of the period of maturity. The short-term obligation on the other hand is unsystematic because of the short notice required to meet them (Alim et al., 2021). Therefore, firms must ensure

significant Current Ratio (CR). This ratio, measures bank's short-term liquidity and its ability to meet its short-term obligations. Wofuru-Nyenke and Iwedi (2023) viewed the current ratio as a measure of a bank's liquidity and its ability to manage its short-term obligations. It is a side-by-side comparison of the firm's current asset and its current liabilities. High current ratio is an indication of a bank's ability to meet its short-term obligations and maintain its financial stability. A lower current ratio signifies risks that can truncate the progress of firms.

### **2.5 Empirical Review**

Literature review is the building block to effective research because it develops the framework to be followed based on previous research. It helps in bringing in the perspective of previous researches in the field by guiding researchers about what went on previously, so as to be able to shape the thought process on the future cause of action. Therefore, relevant literature with respect to liquidity management and financial performance were reviewed systematically.

Wachukwu and Okey-Nwala (2025) examined liquidity management and profitability of the banking firms in Nigeria for a period of fifteen years, from 2007 to 2021 using secondary data. The liquidity management proxies were measured against three profitability proxies (ROA, ROE and EPS). The result of the least square regression showed that, cash reserve ratio had significant effect on

return on asset. This connotes that, for the period of the study, banking industries in Nigerian had good cash research ratio and thus, it helped in achieving profitability. While, loan to deposit ratio had insignificant effect on return on asset. Furthermore, cash reserve ratio and loan to deposit ratio both had significant positive effect on return on equity. This connotes that, equity value is enhances for the period under review. Finally, cash reserve ratio and loan to deposit ratio had no significant effect on earnings per share of the sampled commercial banks in Nigeria. Even though, the study is comprehensive, the period of study and the time for reporting is significant to ignore and capital adequacy ratio was not looked into.

Poroye and Okolie (2024) examined liquidity risk management and financial performance of listed commercial banks in Nigeria for a period of ten (10) years, from 2012 to 2021. Secondary data were used and the regression result showed that, deposit-to-total asset ratio has an insignificant effect on financial performance of banks in Nigeria. Loan-to-deposit ratio has a significant negative effect on financial performance of banks in Nigeria. This implies that a ratio increase in loan-to-deposit will significantly decrease financial performance for the period under study. Liquidity to-total asset ratio had a negative and statistically significant effect on financial performance of banks in Nigeria. This connotes that, a ratio increase in the liquidity to total asset ratio

will significantly decrease financial performance (return on total asset) during the period under as it will amount to keeping idle liquidity level relative to the asset of the banks.

Wofuru-Nyenke and Iwedi (2023) explored the impact of liquidity risk management practices on the profitability of Nigerian banking institutions from 1960 to 2021 using panel data. The study used augmented Dickey-Fuller unit root tests for stationarity, and the Johansen co-integration test to examine the long-run relationship between liquidity risk management and bank profitability. The descriptive statistics revealed that for the period of the study, banks maintained current ratio between the range of 1.74 and 2.49, implying that, most banks-maintained liquidity within a desirable range. Result of the ordinary least squares (OLS) regression showed that, current and cash ratios were negatively and statistically insignificant in relation to net profits, indicating a limited impact of these liquidity measures on profitability.

Alim et al (2021) examined the effect of liquidity risk to management on the financial performance of commercial banks in Pakistan from 2006 to 2019 using panel data and data for the study were obtained from secondary sources. Regression result indicated statistically positive effect of capital adequacy ratio and current ratio on financial performance of banks in Pakistan. This connotes that, banks in Pakistan maintain sound capital adequacy and current ratio which gives it competitive edge in financial success.

This is also in line with the findings of; Dzapasi, 2020 and Alshatti 2015.

Sathyamoorthi, et al., (2020) examined the impact of liquidity management on financial performance of commercial banks in Botswana for 9 years, covering from 2011 to 2017. The regression result showed that, loans to deposits ratio and liquid assets to deposits ratio had statistically significant negative effect on return on assets and return on equity. Cash and cash equivalents to total assets ratio had statistically insignificant positive relationship with return on assets and return on equity while cash to deposits ratio had statistically insignificant negative relationship with return on assets and return on equity. These results showed that, Banks in Botswana for the period had liquidity challenge and if effective management is not constituted, some of the banks may become distress.

Adhikari (2020) examined the impact of liquidity on profitability in Nepalese commercial banks. The study made use of adjusted population of 27 out of 28 commercial banks in Nepal and data were drawn from secondary sources. The panel data regression showed that, there is statically and positive effect of capital adequacy ratio on profitability of commercial banks in Nepal. This connotes that, commercial banks with good liquidity base inspire performance which leads to productivity. This finding is only restricted to Nepal and may not be applicable to Nigeria because of cultural or national laws differences.

Terseer et al., (2020) examined 5 listed deposit money banks in Nigeria for a period of 9 years (2010-2018) but found out that, current ratio had insignificant positive effect on profitability of deposit money banks. The sample size was small; hence, data sets are not robust for the findings to be generalized the Deposit Money Banks in Nigeria. On the contrary, Dadebo and Afolabi (2020) examined ten (10) manufacturing companies from 2012 to 2016. Finding showed that, current ratio as a proxy for liquidity because it had negative and significant effect on profitability of manufacturing firms. The current ratio for these firms were lower than the acceptable ratio of 2:1 and such has adverse effect on performance of the firms. Emmanuel and Stephen (2020) explored 6 banks that are part of an international association in Nigeria for 7 year and found positive and significant effect of capital adequacy and performance. This connotes that, the high CAR ensure banks have the required safety nets of liquidity to enable banks meets its obligations.

Chinweoda et al., (2020) examined listed DMBs in Nigeria for 7 years (2011 to 2017). The result documented that, current ratio had a positive and significant impact on profitability of banks. This implies that, banks in Nigeria have the required liquidity to meets its short-term obligations as they fall due. Banks by their nature of work needs significant amount of cash so as to meets up with customers obligations as at when due. Similarly, Anandasayanan and

Subramaniam (2020) assessed 26 commercial banks in Sri Lanka from 1998 to 2017. The regression result showed positive effect of capitalization ratio on return on asset, whilst a negative and significant effect was found between capital adequacy ratio and return on asset. This connoted that, the firm under discussion had a poor capital adequacy ratio which is reducing its financial performance. The company maintained weak capital adequacy ratio and thus, its activities for the year became more risky which result in poor returns to the company.

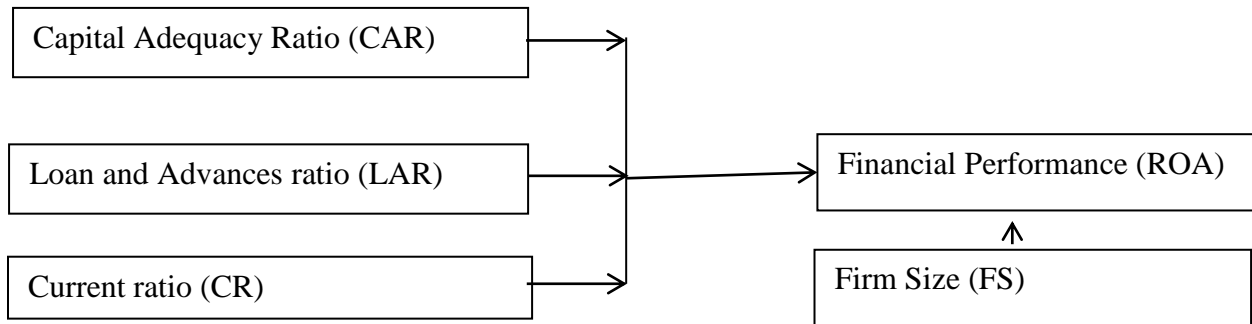
Mwambui and Koori (2019) assessed microfinance banks in Nairobi City County for the period 2011 to 2017 and found positive but insignificant effect of capital adequacy and financial performance. Satyakama and Bhusan (2019) analyze liquidity management and profitability of private sector banks in India for ten (10) banks privately owned by individuals from 2013 to 2017. Regression result showed significant negative effect of cash to deposit ratio and investment to deposit ratio on return on assets, while the relationship between capital adequacy and profitability of the variables under study was significant in the case of return on equity. Otekunrin et al., (2019) examined liquidity management and performance of selected banks in Nigeria for 6 years (2012 to 2017) and found that, liquidity management measured with capital adequacy ratio, and current ratio and cash ratio had positive and significant effect on

performance. Similarly, Kajola, et al., (2019) examined ten (10) Deposit Money Banks in Nigerian from 2008 to 2017. Regression result showed positive and statistically significant effect of current ratio and capital adequacy ratio on return on asset

Waswa, et al., (2018) examined 5 sugar companies in Kenya from 2005 – 2016. The result from the random effect regression showed there is negative but insignificant effect of capital adequacy ratio on financial performance. However, Daniel (2017), examined liquidity and its impact on the efficiency of banks for 25 years (1986–2011). The results of this study indicated that capital adequacy positively influences the operations of deposit money banks. The regression result showed liquidity reserve ratio are positively impacting on returns on equity, while deposit loan ratio are negatively but insignificantly impacting on performance. Adequate liquidity grants freedom for operations with little or no hitches as firms are buoyant enough with liquid assets to discharge its obligations with ease (Ogonna & Ikechukwu, 2016). Abnormal liquidity comes at a cost to the organizations and often lead to losses which affect financial performance (Marozva, 2015)

Furthermore, Charlmer et al., (2018), examined liquidity management of commercial banks in Ghana for a period of ten years (2007-2016) and found that capital adequacy ratio had significant positive effect on profitability of banks. It connotes that, a standard CAR leads to

high performance which is guaranteed by less exposure to risk and enough liquidity to handle the affairs of the organization. However, Sile, et al., (2019) documented negative and significant effect of capital adequacy ratio on financial performance. The finding connoted that, the firm under consideration had poor capital adequacy ratio and as such, it affected performance adversely.



Two important theories were used to underpin the study because of the link its established between the dependent variable and the independent variables. These theories are; the shiftability theory and liquidity-Profitability trade-off theory. The shiftability theory advocates that a bank’s liquidity is adequately maintained if it holds assets that could be shifted or sold to other lenders or investors for cash even during period of crisis or distress. The rational is to have assets that can be “shifted” or liquidated immediately to attend to pressing needs. Therefore, shiftability or transferability of a bank's assets is a basis for ensuring liquidity and the proponents argued that a bank’s liquidity could be enhanced if it holds specified liquid assets required to sell to the Central Bank and the discount Market

## **2.5 Research Framework and Underpinning Theory**

The research framework shows the link between the explained and the explanatory variables, including the control variable as in this case. Therefore, the framework for this study is presents below;

(interbank window). The liquidity-profitability trade-off the synchronization of liquidity and maturity which ensures that a mismatch is capable of causing financial shock. The theory maintained that there has to be balance between liquidity and maturity to avoid skewed relationship which in turn affect performance.

## **3.0 Methodology**

Longitudinal research design was appropriate so as to establish links between the explained (Return on Asset) and the explanatory variables (Capital Adequacy ratio, Loana d advances ratio and current ratio). A positivist research paradigm is considered appropriate for this study as data were collected after the event had happened. Data sets used were collected from secondary sources for a

period of 9 years starting from 2015 to 2023. The population comprised all the fourteen (14) Deposit Money Bank listed on the floor of the Nigeria Exchange Group (NGX) as at 31 December, 2023. Because of the periods covered, census approach became impossible as such, it necessitated the introduction of certain filters to arrive at the adjusted population. Banks to be considered must; have been listed on the Nigerian Exchange Group prior to 2015, be actively trading and have complete financial report for the periods

(2015 to 2023). Upon the application of the filters, twelve (12) DMBs made the list while Ecobank and Polaris bank were exempted (See Appendix I). Correlation analysis was used to assess the degree of relationship between the variables. Descriptive statistics in the study analyzed the nature of the data and Multiple regression technique was used to test the effect of the explanatory variables (capital adequacy ratio, loans and advance ratio and current ratio) on the explained variables (return on asset).

**Table 1: Variables, Definition and Measurements**

S/n	Variable	Acronym	Measurement	Signs
<b>Dependent Variable</b>				
1	Return On Assets	<b>ROA</b>	Profit after tax/Total Assets (Wachukwu & Okey-Nwala, 2025; Chinweoda et al., 2020)	
<b>Independent Variables</b>				
2	Capital Adequacy Ratio	<b>CADQ R</b>	Total Equity/total assets (Sathyamoorthi, et al., 2020)	+
3	Loan & Advances Ratio	<b>LADR</b>	Loans and Advances/total total deposits (Poroye & Okolie, 2024; Emmanuel & Samuel, 2020)	+
4	Current Ratio	<b>CR</b>	Current Assets/Current Liability (Wofuru-Nyenke & Iwedi, 2023; Emmanuel & Samuel 2020)	+
<b>Control Variable</b>				
5	Bank Size	<b>SIZE</b>	Natural Logarithm of total assets (Kitere, et al., 2019))	+

**3.1 Model Specification**

The model for this study shall be a panel regression model because; the study seeks to examine the effects of liquidity management on financial performance of listed Deposit Money Banks in Nigeria. The panel data model is succinctly presented below:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_n X_{nit} + \mu_{it}$$

(1) The second model for this study explains the relationships between elements of bank liquidity management and financial performance in equation 2

$$ROA_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 LADR_{it} + \beta_3 CR_{it} + \beta_4 FS_{it} + \varepsilon_{it}$$

- (2)

Where;

ROA = Return on asset

$\beta_0 - \beta_4$  = regression co-efficient or parameters

CAR = Capital adequacy ratio

LADR = Loan and advances ratio

CR = Current ratio

FS = Firm size

$\varepsilon$  = Error term

it = panel data used in the study

i = cross sectional data &

t = time series data

**4 Result and Discussion**

**Table 2 Descriptive statistics**

Variables	Observations	Mean	Std. deviation	Min	Max
ROA	108	0.01552	0.05813	0.0026	0.3205
CAR	108	0.36523	0.23682	0.0945	0.4543
LADR	108	0.78135	0.15321	0.3226	0.8921
CR	108	1.51251	1.12523	0.0685	1.9235
FS	108	16.8194	3.67685	12.2701	22.991

Survey (2025)

Table 2 contains the description of variables used in the study. The variables are Return on Asset (ROA), Capital Adequacy Ratio (CAR), Loans and advances ratio, (LADR), Current Ratio (CR) and Bank Size (FS). A total of twelve (12) banks were studied over a

period of nine (9) years, thus giving one-hundred and eight observations.

The average ROA of the banks was ₦0.016, connoting that, on the average, sampled banks were able to realize ₦0.016 for every 1₦ invested on the asset of the banks. The least ROA was ₦0.0026

and the maximum ROA was ₦0.3205 indicating that, the ROA for the period, even it is small, the positive nation of the data showed that returns on asset were was small. This gives the banks the desired returns that can keep them in business for a significant period of time.

CAR has a mean value of 0.3652 showing a 36.52% which represent an amount higher than the minimum required CAR. Thus, sampled banks, are more likely to survive financial downturn and unforeseen losses. This high percentage of CAR provides solid base upon which the financial stability of the sampled banks in guaranteed. This is because, high CAR provides sufficient security for liquidity challenges, thus ensuring steady and reliable liquidity management practices that boost financial performance. On the other hand, low CAR percentages expose the banks to risks by constrained liquidity which is capable of thwarting financial performance.

The average LADR stood at 0.781351 which showed that banks for the stipulated period gave 78.14% of customers deposits as loans which makes it less likely to meet up with their short-term obligation as they fall due since loans and advances on the average is very high. High LADR reduces liquidity volume in banks thereby blocking access to attending to viable and timely meeting with required obligations. Low LADR on the other hand, entails that banks are unable to push interest bearing transactions which reduces the amount of profit.

The mean CR of 1.51251 indicated the ability of sampled banks to meet it short term obligations as they fall due. The standard CR is 1.5 and meeting the required threshold is an excellent liquidity management practice. High CR showed that banks have idle cash that could have been invested to make desired returns while low CR puts the sampled banks at risks of failing to meet its short-term obligations.

**Table 3 Correlation Analysis**

	ROA	CAR	LADR	CR	FS
ROA	1.0000				
CAR	0.7316*** 0.0000	1.0000			
LADR	0.4112* 0.0201	0.8202*** 0.0000	1.0000		
CR	-0.3777 0.1063`	0.5219** 0.0116	-0.4317** 0.0445	1.0000	
FS	-0.4183* 0.0624	0.6168*** 0.0011	-0.4917*** 0.0052	0.8278*** 0.0000	1.000

\*\*\*(significant 1%)

\*\* (significant 5%)

\*(significant 10%)

Survey (2025)

Table 3 above shows that there is positive and significant statistical relationship between CAR and ROA. This connotes that, increase in CAR can lead to corresponding increase in ROA of listed DMBs in Nigeria for the period of the study. The relationship that exists between LADR and ROA is significant and positive which implies that, a reasonable

increase in LADR can lead to increase in ROA of listed DMBs in Nigeria. CR has a negative and insignificant association with ROA. This inverse relationship showed that, the CR of listed DMBs in the Nigeria for the period is somewhat counterproductive to corporate performance proxied with ROA.

**Table 4: Summary of Random Effect Regression and post estimation tests**

ROA	Coefficient	Std. error	T-value	P>(z)	VIF	1/VIF
Constant	-.0838693	.0810124	-1.04	0.238		
CAR	.1972967	.0256511	7.69	0.000	1.32	0.730739
LADR	-.0009917	.0030991	-0.32	0.650	1.12	0.871132
CR	-.0037763	.0042430	-0.89	0.480	1.14	0.867403
SIZE	.0068591	.0046345	1.48	0.238	1.47	0.904247
Mean					1.26	
<b>Hetttest:</b>						
Chi <sup>2</sup> (1)	17.93					
Prob.	0.0000					
<b>Hausman</b>						
Chi <sup>2</sup> (4)	16.38					
Prob	0.041					
R –overall	0.7569					
F- statistics	125.02					
Probability	0.0000					

*Survey (2025)*

#### **4.1 Post Estimation Tests**

The Variance Inflation Factor (VIF) and the Tolerance values estimated was used to test for multicollinearity in all the regressions. The variance inflation factor and tolerance estimated were found to be consistently smaller than ten and one respectively for all the regressions and the mean VIF of 1.26 is smaller than ten (10), an indication of harmless multicollinearity. The heteroscedasticity tests conducted showed a chi-square value

of 17.93 which has a probability that is significant at 1%, as such the study cannot rely on the OLS regression. The Hausman specification test conducted to enable a selection of the best model for analysis reveals a chi<sup>2</sup> value of 16.38 with probability value of 0.0041, thus suggesting the appropriateness of random effect model for the study.

#### **4.2 Random Effect Regression Result**

The cumulative  $R^2$  of 0.7569 is the coefficient of determination which signified that capital adequacy ratio, loan and advance ratio, current ratio, and firms size cause 75.69% of the total variation in performance of listed DMBs while the remaining 24.31% was caused by factors not covered in the model. The F-statistics had a value of 125.02, which is significant at 1%; an indication that the model is fit. Since the model is fit, the regression result is relied upon and the hypothesis tested are valid.

#### **4.3 Discussion and Hypotheses Testing**

Capital adequacy ratio had a coefficient value of 0.1972967 with a T-value of 7.69 which is statistically significant at 1% (0.000). This shows that CADQR is positively and significantly impacting on financial performance of listed Deposit Money Banks at 1%. This signifies that CAR for the period under consideration is strong thereby giving banks the required financial resources to discharge its responsibility so as to make profit. Increase in capital adequacy ratio by 1% would lead to an increase in bank performance by ₦0.19. High capital adequacy ratio reduces risks and strengthens liquidity which gives firms the needed push to execute its financial obligations as they fall due without experiencing challenges. Weak capital adequacy ratio increases financial risk thereby plummeting the financial fortune of banks. This is consistent with chinweoda et al., (2020) and Charlmer et al., (2018) but contradict Anandasayanan

and Subramaniam (2020). On the basis of this finding, the null hypothesis one (1) formulated is thereby rejected.

Loan and advances ratio had a coefficient value of -0.0009917 with a T-value of -0.32 which is not statistically significant at any of the levels (0.650). this shows inverse relationship between the explained (financial performance) and the explanatory variable (loan and advance ratio). This signified that LADR has a negative but insignificant impact on performance of listed DMBs in Nigeria. Even though, the effect is not significant, the negative relationship is an indication that, DMBs in Nigeria are not meticulous with their loans and advances which often leads to high loan loss in DMBs. This finding underscores the issues problematized. Therefore, the study fails to reject the null hypothesis two (2) formulated.

Current ratio had a coefficient value of -0.0037763 with a T-value of -0.89 that is not statistically significant at any level (0.480). This signifies that CR has a negative but insignificant impact on financial performance of listed DMBs in Nigeria. The effect of current ratio is not significant on financial performance but the negative effect is a pointer that DMBs in Nigeria are unable to meet the required current ratio and this will be counterproductive. Weak current ratio jeopardizes bank's ability to meet its short term obligations as at when due. Banks with weak current ratio will experience cash crunch and it exposes them to risks

which have adverse effect on performance. extremely strong current ratio on the other hand can lead to excessive liquidity that thereby having idle financial resource. The findings of this study were in line with findings of previous studies conducted by Mohamad et al. (2014) and Simamora and Oswari (2019) and Mwangi (2014) but are not in conformity with the findings of Ng'aari (2016) who found a positive significant relationship between current ratio and banks performance. On the basis of this finding, the study fail to reject the null hypothesis 3 formulated.

## **5. Conclusion**

Financial resources are the lifeline of every corporate organization, thus, Deposit Money Banks in Nigeria are the integral financial pillar in the Nigerian economy. Their financial security and freedom will have an enormous positive reverberation on the economy. This study examines the effect of liquidity management on performance of listed DMBs in Nigeria from 2015-2023 covering only listed DMBs. The study adopted correlational research design for the data obtained from secondary sources. The results of the study reveal that, Capital adequacy ratio has a positive and significant effect on performance of DMBs in Nigeria, while loans and

advances ratio and current ratio has a negative but insignificant effect on performance of DMBs in Nigeria. The study observed that, liquidity management is poor in listed deposit money banks in Nigeria. Therefore, it is imperative for the board of directors to constitute effective board that will address the management of liquidity in listed deposit money banks in Nigeria so as to attain profitability with ease.

## **6. Implications/Recommendations**

The findings connoted that, the Capital Adequacy ratio of sampled listed Deposit Money Banks in Nigeria for the study period is well within the required threshold, hence sampled banks have the required financial strength to ensure survivability. However, the listed Deposit Money Banks in Nigeria for the study period had poor Loan and Advance ratio as well as poor current ratio. This is capable of adversely impacting on liquidity which will eventually lead to poor financial performance. It is on this bases that the study recommended that, Deposit Money Banks in Nigeria should sustain their Capital adequacy ratio and then ensure that they improve on their Loan and Advance ratio as well as Current ratio to get to the required threshold.

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**Appendix I**

**Table 1: Adjusted population**

<b>S/</b>	<b>Name</b>	<b>Date of Incorp.</b>	<b>Date of Listing</b>
<b>1</b>	Access Bank Plc.	08/02/1989	14/04/1998
<b>2</b>	Fidelity Bank Plc.	23/10/1987	20/10/1998
<b>3</b>	First Bank Plc.	31/03/1894	01/09/1962
<b>4</b>	First City Monument Bank	20/04/1945	20/06/2001
<b>5</b>	Guarantee Trust Bank Plc	20/07/1990	03/08/1994
<b>6</b>	Jaiz Bank	04/11/2011	30/11/2015
<b>7</b>	Stanbic IBTC	23/08/1982	19/03/1985
<b>8</b>	Sterling Bank	16/09/1962	01/04/2000
<b>9</b>	Union Bank of Nigeria	26/08/1917	02/08/1962
<b>10</b>	Plc. United Bank for Africa	09/08/1961	12/06/1970
<b>11</b>	Wema Bank Plc.	01/04/1970	23/06/1989
<b>12</b>	Zenith Bank Plc.	09/05/1990	21/10/1993

## DEBT FINANCING AND FINANCIAL PERFORMANCE OF LISTED CONSUMER GOODS FIRMS IN NIGERIA

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### **Abstract**

*This paper examined the relationship between debt financing and financial performance of listed consumer goods firms in Nigeria for the period 2013 to 2024. Secondary data was obtained from a population of ten firms through their annual reports and accounts. Debt financing as an independent variable of the study was proxied by long term debt and short term debt, while return on assets was used to represent financial performance as the dependent variable of the study. The study adopted robust ordinary least square multiple regression technique in analyzing the data. The findings revealed that long term and short term debt have negative significant impact on financial performance of the firms. It is recommended that the firms should reduce the percentage of debt components in their capital structure and focused more attention on equity financing or debt with a cheaper cost attached to it, since the result provides evidence that long term debt and short term debt have negative significant effect on financial performance.*

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**Keywords:** Long term debt, Short term debt, financial performance and pecking order theory

### **Introduction**

Financial performance remains a central concern in corporate finance research because it reflects how effectively firms deploy available resources to generate returns and sustain competitive advantage (Mirza & Javed, 2013; Zeitun & Tian, 2014). Beyond profitability outcomes, financial performance captures the

cumulative effects of managerial decisions relating to investment, financing, and operational efficiency (Naeem et al., 2020). In developing economies such as Nigeria, firm-level financial performance is particularly critical due to its implications for economic growth, employment generation, shareholder wealth

maximisation, and overall gross domestic product. Evidence from the Nigerian manufacturing sector indicates that sound financial performance enhances firm competitiveness, improves returns on investment for shareholders, and contributes meaningfully to national economic development (Hameed et al., 2020).

Consequently, capital structure decisions, particularly the use of debt financing, have continued to attract scholarly attention due to their implications for firm risk exposure, cost of capital, and long-term value creation (Modigliani & Miller, 1963; Myers, 1984). In empirical studies involving small and medium-scale enterprises, however, the objective measurement of financial performance is often constrained by low levels of financial literacy, inconsistencies in accounting standards, and statutory exemptions that limit the availability of audited financial statements. As a result, researchers have increasingly relied on subjective or indirect measures of financial performance, focusing on perceived efficiency in areas such as returns on production investment, marketing investment, and sales growth expectations. Evidence from Nigerian enterprise-level studies suggests that such perceptual measures provide a valid alternative for capturing firm-level financial outcomes where objective data are unavailable (Suleiman et al., 2021). From a theoretical perspective, the relationship between debt financing and financial performance is inherently

ambiguous. The trade-off theory posits that firms can enhance performance by exploiting the tax advantages of debt up to an optimal threshold, beyond which financial distress costs dominate (Kraus & Litzenberger, 1973). Agency theory further suggests that debt may discipline managerial behavior and reduce free cash flow inefficiencies, yet excessive leverage can intensify conflicts between shareholders and creditors, ultimately impairing firm performance (Jensen & Meckling, 1976; Jensen, 1986). Empirical evidence from both developed and emerging markets remains inconclusive, reporting positive, negative, and non-linear relationships between leverage and performance, thereby underscoring the importance of institutional and sector-specific contexts (Abor, 2005; Ebaid, 2009; Zeitun & Tian, 2014).

In Nigeria, the capital structure performance relationship is particularly critical given the dominance of bank-based financing and limited access to long-term equity capital. Nigerian firms rely heavily on debt financing under conditions of high interest rates, volatile exchange rates, and stringent collateral requirements, which heighten refinancing and solvency risks (Akinlo, 2011; CBN, 2023). These challenges are especially pronounced in the consumer goods sector, which plays a strategic role in employment generation, manufacturing output, and household consumption (NBS, 2022). Despite recording a 5.7 percent year-on-year growth in the food, beverages, and tobacco subsector in 2021,

the industry continues to face rising production costs, foreign exchange constraints, supply chain disruptions, and declining consumer purchasing power (KPMG, 2023; PwC, 2022).

The severity of these pressures is reflected in the increasing number of consumer goods firms that have exited the Nigerian Exchange (NGX) following prolonged financial underperformance. Seven-Up Bottling Company Plc was delisted in 2018 after sustained margin compression and rising operating costs undermined shareholder value. UTC Nigeria Plc, a diversified consumer and retail firm, was delisted in 2021 following years of losses and erosion of equity. Similarly, Evans Medical Plc, a consumer-oriented pharmaceutical firm, exited the NGX in 2021 after persistent profitability challenges and capital constraints. More recently, Guinness Nigeria Plc was delisted in 2024 following prolonged earnings decline, high finance costs, and restructuring pressures, while GlaxoSmithKline (GSK) Consumer Nigeria Plc was also delisted in 2024 after sustained weak financial performance and inability to navigate Nigeria's challenging operating environment (BusinessDay, 2021; NGX, 2024; KPMG, 2023). These exits signal deeper structural weaknesses within the sector and raise concerns about the sustainability of existing financing strategies, particularly heavy reliance on debt under adverse macroeconomic conditions.

Despite these developments, empirical studies on capital structure and financial

performance in Nigeria remain limited in scope and depth. Many adopt cross-sectoral samples that obscure industry-specific dynamics, while others fail to disaggregate debt into short-term and long-term components despite their differing risk and performance implications (Onaolapo & Kajola, 2010; Salawu, 2009). Moreover, existing evidence on listed consumer goods firms is sparse, fragmented, and largely outdated, failing to reflect recent monetary tightening, exchange rate instability, and structural shifts in consumer markets.

Against this backdrop, this study empirically examines the relationship between capital structure and the financial performance of listed consumer goods firms in Nigeria. By focusing on debt financing components within a sector that has experienced repeated firm exits and financial distress, the study provides updated, industry-specific evidence from an emerging market context. The findings are expected to inform managerial financing decisions and support policy initiatives aimed at improving access to sustainable capital and enhancing firm resilience in Nigeria's manufacturing sector.

## **Review of Empirical Studies and Theoretical Framework**

### **Long-Term Debt and Financial Performance**

Agboola and Mazadu (2025) examined the impact of long-term debt on the

financial performance of listed consumer goods firms in Nigeria over 2014–2023 using an ex-post facto research design, a population of 21 listed consumer goods firms, a stratified sample of 12 firms, secondary data from NGX fact sheets, and panel regression analysis, concluding that long-term debt ratio had an insignificant negative association with return on capital employed (ROCE); however, the study is limited by a small sample size, reliance on a single performance proxy, and lack of control for macroeconomic and firm-specific variables. Gana et al. (2025) investigated the influence of long-term debt on financial performance of selected industrial goods firms in Nigeria from 2014–2023 using an ex-post facto research design, a purposive sample of 3 firms (Dangote Cement PLC, Lafarge Africa PLC, BUA Cement PLC) drawn from the NGX, secondary annual reports, and panel data analysis, finding that higher long-term debt ratios significantly improved financial performance, though the very small sample and sector-specific focus limit generalizability.

Nweneda and Barinem (2025) examined the relationship between long-term debt and financial performance of listed industrial goods firms in Nigeria using an ex-post facto design, a sample of 13 listed industrial goods firms, secondary data from annual reports, and descriptive and Pearson correlation analysis via SPSS, reporting that long-term debt had a strong positive relationship with return on assets, but the study lacks regression or more sophisticated panel data methods to

control for confounding factors. Peace and Onyenania (2025) explored the effect of long-term debt on financial performance metrics (ROA, ROCE, ROE, GPM) of ten Nigerian firms over five years using an ex-post facto quantitative design, a sample of 10 firms, secondary data from annual reports, and regression analysis, finding that long-term debt had a significant but complex effect on key performance indicators, though the study did not sufficiently account for external market and economic factors that could influence operating profits.

Aghaebe and Oranefo (2024) investigated the effect of long-term debt on financial performance of Nigerian listed consumer goods firms over 2012–2022 using an ex-post facto design, a population of 21 firms, a purposive sample of 16, secondary annual report data, and descriptive, correlational, and regression analysis, finding that long-term debt to equity ratio had a non-significant positive effect on return on assets, but the study did not consider firm size, liquidity, or macroeconomic shocks, limiting explanatory power.

### **Short-Term Debt and Financial Performance**

Agboola and Mazadu (2025) investigated the impact of capital structure on the financial performance of listed consumer goods firms in Nigeria. The study adopted Expost-facto research design and extracted data from secondary source. A quantitative approach was employed for data analysis to analyze data sourced and

drawing a sample of 12 using a stratified sampling technique through filtering criteria, out of the population of 21 listed consumer goods firms on the Nigerian Exchange Group PLC's Data Fact Sheet. The study covered a 10-year period (2014-2023). The study concludes that Short Term Debt Ratio (STDR) has a significant negative relationship with the return on capital employed for consumer goods firms in Nigeria. While the study provides valuable insights into the negative impact of short-term debt on return on capital employed in Nigerian consumer goods firms, the reliance on a small stratified sample of 12 firms limits generalizability. Additionally, using a single performance proxy (ROCE) may not fully capture the multidimensional nature of firm performance, and the study does not account for macroeconomic shocks or firm-specific characteristics that could influence short-term debt effectiveness. Aghaebe and Oranefo (2024) examined capital structure and financial performance of consumer goods firms listed in Nigeria. The study adopted the ex-post facto research design and the population comprised of twenty-one listed consumer goods firms in Nigeria. The sample was purposively selected a sample size of 16 firms from the consumer goods sector of the Nigerian Exchange Group (NGX), from 2012-2022. The data were obtained from annual reports of the firms included in the sample. The data were analyzed using descriptive tools, correlational and regression analyses. The results showed that short term debt to equity ratio has a significant negative

effect on the return on assets of consumer goods firms listed in Nigeria. This study highlights the significant negative effect of short-term debt on return on assets in Nigerian consumer goods firms, but its purposive sampling approach introduces selection bias, reducing external validity. Furthermore, although descriptive, correlational, and regression analyses were employed, the study did not address potential endogeneity issues or control for firm size, liquidity, and market conditions, which could affect the observed relationships. Emmaculate et al. (2024) assessed the impact of capital structure on the financial performance of deposit money banks (DMBs) in Nigeria with specific reference to how debt ratio and equity ratio affect return on equity and net interest margin of banks in Nigeria. The study covers 12 listed DMBs in Nigeria. The sample size of 12 banks was determined using convenience sampling technique for the period 2013- 2022. The study utilizes panel design to analyze the data based on random effect estimation. The study found a positive relationship between of short term debt with financial performance measured by Net Interest Margin. The study's focus on deposit money banks and the positive association between short-term debt and financial performance is insightful; however, the use of convenience sampling of 12 banks may introduce bias and limit representativeness. Moreover, applying only a panel design with random effects may not adequately address unobserved heterogeneity, and the findings may not be transferable to non-financial firms.

Omotayo et al. (2024) explored the relationship between capital structure and the financial performance of listed non-financial companies on the Nigerian Exchange Group (NGX). The research design adopted is ex-post-facto. The population consists of all 105 non-financial companies listed on the NGX, and a purposive sample of 60 such companies is chosen for the study. Data is collected from the annual reports of these companies for the period 2009 to 2022. The findings indicate a positive association between short term debt and ROA, implying that a higher ratio is linked to improved firm performance. The research provides evidence of a positive relationship between short-term debt and ROA for non-financial Nigerian firms. However, the purposive sampling of 60 firms from a population of 105 may lead to selection bias, and the study does not account for industry-specific effects, macroeconomic factors, or debt maturity structures, which are critical in understanding short-term debt dynamics. Prenaj et al. (2024) analyzed the impact of the capital structure on the performance of non-listed companies. The study is based on data from 50 non-listed companies in Kosovo for the period 2015–2020. The Kosovar non-listed companies use two accounting-based measures of financial performance: return on assets (ROA) and return on equity (ROE). The results of empirical tests indicate that a capital structure composed of short-term debt, long-term debt, and total debt is negatively influencing the performance of the companies measured

by ROA. On the other hand, capital structure affects the company's performance positively, except for long-term debt, which has no significant impact on the company's performance as measured by ROE. The study's analysis of non-listed Kosovar companies offers an important perspective on debt structure, showing negative effects of short-term debt on ROA. Nevertheless, the sample of 50 firms is relatively small, and the context of non-listed firms in Kosovo may limit generalization to publicly listed firms or other emerging markets. The study also does not incorporate firm-specific operational variables that could influence performance. Udo et al. (2024) examined the intricate capital structure and firm performance nexus, focusing on retained earnings in the Nigerian oil and gas industry. The study used a sample of 8 oil and gas firms and the pooled mean group autoregressive distributed lag model. The results revealed a positive long run nexus among capital structure, retained earnings, market value, and performance from 2001 to 2022. The results showed that firms in the oil and gas trust on short-term debts for their operational and business activities. The nexus between retained earnings and the capital structure mix indicated that the higher a firm's earnings retention is, the faster its growth chances. An inverse nexus was observed between long-term debts, retained earnings, market value, and performance. This study provides a comprehensive long-run analysis of capital structure and retained earnings in Nigerian oil and gas firms, revealing

nuanced relationships between short-term debt and performance. However, the very small sample size (8 firms) reduces statistical power and generalizability, and the sector-specific focus limits the applicability of findings to other industries, such as consumer goods or manufacturing.

Abdulwahab et al. (2023) examined the effect of capital structure with firm financial performance in the Nigeria DMBs. Empirical studies were reviewed to scrutinize the upshot of capital structure in connection to the performance of firms. A correlational design was adopted. Population and sample size of the study consists of 13 listed DMBs on the floor of Nigeria Exchange Group for the period 2012 to 2021. Fixed effects regression model was employed to analyse the data of the study. The result showed that both EFR and DEFR were insignificant to the firm financial performance of DMBs in Nigeria. The study investigates capital structure effects on Nigerian DMBs and finds no significant impact of equity or debt ratios on financial performance. While methodologically sound using fixed effects regression, the exclusive focus on DMBs limits external validity to other sectors. Additionally, the study does not explore potential moderating or mediating variables, such as liquidity, profitability, or macroeconomic conditions, which could mask the relationship.

Abor (2005) examined the impact of short-term debt on firm performance of

listed Ghanaian firms over 1998–2002 using an ex-post facto research design, a population of 22 firms, a census sample, secondary financial statement data, and panel regression analysis, finding that short-term debt positively and significantly affected ROE, though the study is dated and may not reflect current financing conditions. Mule and Mukras (2015) studied the relationship between short-term leverage and financial performance of Kenyan listed firms from 2007–2011 using an ex-post facto design, a population of listed firms, a purposive sample of 47 firms, secondary annual report data, and panel regression analysis, finding a positive and significant relationship, with the limitation that sectoral heterogeneity was not adequately controlled.

Tesema (2023) investigated the effect of short-term debt on operating and financial performance of Ethiopian manufacturing firms over 2017–2021 using an ex-post facto research design, a population of manufacturing firms, a purposive sample of 85 firms, secondary data from financial statements, and robust random effects and GMM estimation, reporting a negative and significant effect, though results are sector-specific. Nguyen et al. (2023) examined the impact of short-term debt on profitability of Vietnamese firms between 2012–2018 using an ex-post facto quantitative design, a population of firms, a stratified sample of 300 firms, secondary financial reports, and panel regression analysis, finding that short-term debt positively influenced ROA and

ROE, but the study did not account for firm-level risk differences.

### **Pecking Order Theory**

Pecking order theory was developed by Myers (1984), according to this theory firm prefer internal funding over external funding. In case firms required external funding, they would prefer debt over equity and equity is considered as last resort. So the firm don not have predetermined or optimum debt to equity ratio due to information asymmetry. The firms adopt conservative approach when it comes to dividends and use of debt financing to maximize the value of firm. One of the aspects of pecking order theory implies that when it comes to profitable firms, they would always prefer internal financing rather than taking up new debts or equity. Even though, debt is considered cheaper than equity within certain proportions.

Myers (1984) suggests that it is because the value of firm and wealth of shareholders associated with firm is distributed by asymmetry of information. This argument is supported by Fama and Fench (2000) who found that profitable firms were less levered as compared to non-profitable firms. Murray and Goyal (2003) held that large firms tend to accumulate debts in order to support and keep up with the payments of dividends while small firms tend to behave in opposite behavior. Firms with

$$ROA_{it} = \beta_0 + \beta_1 LD_{it} + \beta_2 SD_{it} + \beta_3 FSZ_{it} + \epsilon_{it}$$

higher potentials for growth prefer using less long term debt as well as debt with fewer restrictive arrangements in order to become more financial flexible. Firms with sufficient fixed assets can generate external finance more easily and at lower cost by using their assets as collateral, which support the tradeoff theory. Therefore, pecking order theory is adopted to underpin this study.

### **Methodology**

Correlation research design was adopted because the study attempts to measure the relationship between debt financing and financial performance of listed consumer goods firms in Nigeria for the period of 2013 to 2024. The population of the study consists of only the 21 listed consumer goods firms on Nigerian Exchange Group. In view of the availability of data for the 10 firms, the study adopted random sampling approach by studying only the 10 firms as a sample size. The study used secondary data which was obtained from the annual reports and accounts of the 10 listed consumer goods firms in Nigeria within the period of the study. Robust ordinary least square multiple regression was adopted for the panel data analysis in order to establish the relationship among the variables of the study. Multiple regression was considered appropriate for this study. Thus, model of the study is specified as:

Where: ROA<sub>it</sub> = Return on assets, LD<sub>it</sub> = Long-term debt ratio, SD<sub>it</sub> = Short-term debt ratio, FSZ<sub>it</sub> = Firm size,  $\beta_0$  = Intercept term,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$  = Coefficients of explanatory variables,  $\epsilon_{it}$  = Error term capturing unobserved factors.

### Variables Measurement and Source

**Table 1**  
*Variables Definition and Measurement*

Variables	Variables Name	Variables Measurement and Source
<b>ROA</b>	Return on Assets	Measured as the profit before interest and tax divided by the firm's total assets (Mwangi & Birundu, 2015).
<b>LD</b>	Long Term Debt	Measured as the ratio of long term debt to firm's total assets (Fosu, 2013).
<b>SD</b>	Short Term Debt	Measured as the short term debt divided by the firm's total assets (Rehman, 2013).
<b>FSZ</b>	Firm Size	Measured as the natural logarithms of firms' total assets (Nweneda and Barinem, 2025).

**Sources:** Compiled by the Author, 2025.

### Results and Discussion

#### Descriptive Statistics

Descriptive Statistics refers to the branch of statistics that summarizes, organizes, and presents data in an informative way to make it understandable and interpretable without making inferences or predictions beyond the dataset (Kothari, 2004). It

provides simple summaries about the sample and the measures, including measures of central tendency (mean, median, mode), measures of dispersion (standard deviation, variance, range), and frequency distributions (Sekaran & Bougie, 2016).

**Table 2**  
*Descriptive Statistics*

Variables	Obs.	Min.	Max.	Mean	Std. Dev.
<b>ROA</b>	120	-0.73	0.31	0.004	0.130
<b>LD</b>	120	0.01	0.44	0.151	0.111
<b>SD</b>	120	0.06	0.81	0.459	0.187
<b>FSZ</b>	120	0.006	0.211	0.059	0.041

**Source:** Stata Output, 2025.

The descriptive statistics for ROA show a minimum of -0.73 and a maximum of 0.31, indicating substantial variation in profitability among the sampled consumer goods firms in Nigeria. The minimum ROA of -0.73 indicates that, for at least one firm in the sample, the firm incurred a substantial loss relative to its total assets during the study period. In practical terms, this means that the company's expenses, including operating costs and interest payments, exceeded its profit before interest and tax, resulting in a negative return on the resources it controlled. Such a low ROA highlights inefficient use of assets and suggests potential operational, financial, or managerial challenges within the firm, such as poor cost management, low sales revenue, high leverage costs, or ineffective investment decisions. The mean ROA of 0.004 suggests that, on average, firms barely generate positive returns from their assets, highlighting marginal efficiency in resource utilization. The standard deviation of 0.130 reflects moderate dispersion, implying that while some firms are highly profitable, others experience significant losses. This variability underscores the heterogeneous nature of financial performance in the sector, which may be influenced by firm-specific strategies, market conditions, and financial management practices.

Long-term debt among the sampled firms ranges from 0.01 to 0.44, with an average ratio of 0.151, suggesting that, on average, firms finance about 15% of their total assets through long-term borrowings. The standard deviation of 0.111 indicates

moderate variability, showing differences in long-term financing strategies across firms. The relatively low reliance on long-term debt may reflect cautious leverage policies, high cost of borrowing, or limited access to long-term financing in the Nigerian market. Firms with higher long-term debt may have greater capacity for investment and expansion, while those with lower ratios might be constrained in pursuing growth opportunities.

The short-term debt ratios range from 0.06 to 0.81, with an average of 0.459, revealing that nearly half of the sampled firms' assets are financed by short-term obligations. The standard deviation of 0.187 shows considerable variability, indicating that firms differ widely in their dependence on short-term debt. This suggests that many firms rely heavily on short-term borrowings to support working capital and operational activities, potentially exposing them to liquidity risks. The high mean of short-term debt relative to long-term debt highlights the firms' preference or necessity for more flexible, short-term financing arrangements in the consumer goods sector.

Firm size, measured as the natural logarithm of total assets, has a minimum of 0.006, maximum of 0.211, and a mean of 0.059, with a standard deviation of 0.041, indicating moderate variation in operational scale among the sampled firms. This shows that while most firms are small to medium-sized, a few larger firms exist with greater asset bases and financial capacity. Firm size may

influence both access to debt financing and the ability to utilize assets efficiently, making it an important control variable

when assessing the relationship between debt structure and financial performance.

**Table 3**  
*Variance Inflation Factor*

<b>Variable</b>	<b>VIF</b>	<b>Tolerance</b>
Long-Term Debt (LD)	1.25	0.807
Short-Term Debt (SD)	1.40	0.714
Firm Size (FSZ)	1.10	0.912
<b>Mean VIF</b>	1.25	-

**Source:** Stata Output, 2025.

The multicollinearity test results show that all variables have Variance Inflation Factor (VIF) values below the accepted threshold of 10 (Long-Term Debt = 1.25, Short-Term Debt = 1.40, Firm Size = 1.10), and tolerance values above 0.1 (LD = 0.807, SD = 0.714, FSZ = 0.912), indicating that none of the variables exhibit problematic linear correlation. The

mean VIF of 1.25 further confirms that multicollinearity is not a concern in the dataset. These statistics suggest that the regression coefficients can be reliably estimated without inflation due to high correlation among predictors, satisfying the standard statistical threshold for acceptable multicollinearity (O'Brien, 2007).

**Table 4**  
*Heteroskedasticity Test*

<b>Test Statistic</b>	<b>Chi2 Value</b>	<b>P-value</b>
Breusch-Pagan / Hetttest	4.71	0.030

**Source:** Stata Output, 2025.

The Breusch-Pagan heteroskedasticity test yielded a Chi2 value of 4.71 with a p-value of 0.030, which is less than the conventional 5% significance level ( $\alpha = 0.05$ ). This indicates that the null hypothesis of homoskedasticity is rejected, meaning that heteroskedasticity is present in the dataset. The presence of heteroskedasticity implies that the variance of the error terms is not constant

across observations, which can lead to inefficient and biased standard errors if ordinary least squares (OLS) regression is used without correction. Therefore, adopting PCSE (Panel Corrected Standard Errors) approach is justified to obtain reliable and consistent parameter estimates, ensuring valid statistical inference (Wooldridge, 2010).

**Table 5**  
*Summary of Regression Results – Panel Corrected Standard Errors*

<b>Variables</b>	<b>Coefficient</b>	<b>P-Value</b>
<b>Constant</b>	0.222	0.000
<b>LD</b>	-0.538	0.014
<b>SD</b>	-0.399	0.000
<b>FSZ</b>	0.797	0.127
<b>R<sup>2</sup></b>	0.143	
<b>Wald Chi<sup>2</sup></b>	7.01	
<b>Prob. Chi<sup>2</sup></b>		0.000

**Source:** Stata Output, 2025.

The Wald Chi<sup>2</sup> value of 7.01 with a p-value of 0.000, which is significant at the 1% level, indicates that the regression model is statistically well-fitted and that the independent variables jointly influence the dependent variable (Greene, 2018). Additionally, the coefficient of determination (R<sup>2</sup>) of 0.14 (14%) indicates that only 14% of the variation in financial performance (ROA) of listed consumer goods firms in Nigeria is explained by the independent variables (long-term debt, short-term debt, and firm size), while the remaining 86% is attributed to other factors outside the model. Although this R<sup>2</sup> value may appear low, it is consistent with empirical studies on firm performance, where multiple unobserved factors (management quality, market conditions, regulatory environment, and macroeconomic shocks) also influence financial outcomes (Wooldridge, 2010; Baltagi, 2021; Fosu, 2013). Therefore, a modest R<sup>2</sup> does not invalidate the model, as significance tests like the Wald Chi<sup>2</sup> demonstrate that the explanatory variables still jointly affect financial performance.

Table 5 reveals that long-term debt is negatively and significantly associated with financial performance (ROA) of listed consumer goods firms in Nigeria, with a beta coefficient of -0.538 and a p-value of 0.014, significant at the 5% level. This result aligns with the a priori expectation based on the pecking order theory, which predicts that firms with higher debt levels may face increased interest obligations and financial risk, thereby reducing profitability (Myers & Majluf, 1984). The finding is consistent with Abbas et al. (2013), who documented a negative relationship between leverage and firm performance, but it contradicts Hsu (2013), who found no significant effect in the context of Taiwanese firms. The negative coefficient validates the theoretical prediction that excessive reliance on long-term debt can strain resources and reduce the efficiency of asset utilization in the Nigerian consumer goods sector.

Similarly, Table 5 shows that short-term debt has a significant negative effect on financial performance, with a beta coefficient of -0.399 and a p-value of

0.000, significant at the 1% level. This aligns with the a priori expectation that short-term borrowings, while providing liquidity for operational activities, can increase financial vulnerability if firms over-rely on them for working capital, consistent with the pecking order theory (Myers & Majluf, 1984). The result corroborates the findings of Akhtar et al. (2012) but is inconsistent with Birru (2016), who reported an insignificant relationship in Ethiopian banks. The negative impact confirms that, in the context of Nigerian consumer goods firms, short-term debt, when not optimally managed, can erode profitability due to high rollover risk and interest costs, supporting the theoretical prediction regarding debt-induced performance constraints.

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## Conclusion and Recommendations

The study investigates the impact of debt financing on financial performance of listed consumer goods companies in Nigeria. It was found that long term debt and short term debt are negatively influencing the financial performance of listed consumer goods firms in Nigeria, while control variable of the study is found to have positive insignificant influence on financial performance of listed consumer firms in Nigeria. It is recommended that the listed consumer goods firms in Nigeria should reduce the level of debt components of their capital structure and focused more attention on equity financing, since it was found that both the long term debt and short term debt have negative relationship with the firms' financial performance and also to look for a debt with cheaper cost of capital attached to it.

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## EFFECT OF BOARD DIVERSITY ON CARBON EMISSION DISCLOSURE OF LISTED ENERGY COMPANIES IN NIGERIA

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### **Abstract**

*Growing recognition of the firm's role in environmental change has drawn diverse stakeholders' interest. This has led to increasing pressure on firms to operate in an environmentally accountable manner and to disclose their environmental impacts. This study investigates the effect of board diversity on carbon emission disclosure of listed energy companies in Nigeria, using board independence, board gender diversity, board nationality and board expertise as the independent variables while carbon emission disclosure is the dependent variable. The study uses panel data from seven sampled energy firms listed on the Nigerian Exchange Group (NGX) from 2014 to 2023. The study is grounded on stakeholder theory. Data used were collected via annual and sustainability reports of the sampled firms. The results showed that board independence, board gender diversity and board nationality have significant positive impact on carbon emission disclosure. This aligns with stakeholder theory that a more independent and diversified board is better positioned to address various stakeholders' expectations. This study offers several policy implications for corporate boards, policymakers and other stakeholders with respect to improving corporate governance mechanisms and reducing the carbon emission footprint. Considering the findings of the study, it is recommended that corporate governance code regulators should increase the minimum number of independent directors in corporate boards of the energy sector in Nigeria, and policymakers should ensure that carbon emission disclosure is mandatory in order to improve the incidence of transparency and accountability.*

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**Keywords:** Carbon Emission Disclosure, Board Independence, Board Gender Diversity, Board Nationality, Board Expertise, Listed Energy Companies. Nigeria

## **1. Introduction**

Globally, the energy industry employs millions, with projections suggesting that the renewable energy sector could create about 300,000 jobs and add approximately US\$7.4 billion annually to GDP by 2030 (Ogunniyi et al., 2023). As the world increasingly pursues sustainable development, the environmental and sustainability implications of energy sector activities have become more pronounced. The energy sector remains a vital contributor to Nigeria's economy, driving economic growth and employment generation. In 2025, the sector accounted for a significant proportion of the country's GDP, with the oil sector alone contributing about 4.05% to GDP in the second quarter of 2025, representing a 20% year-on-year growth (Umeji et al., 2023). Despite Nigeria's vast natural resource endowment, including oil wealth and other strategic advantages, the country has struggled to translate these endowments into sustainable development outcomes, largely due to weak governance structures and institutional deficiencies (Bello & Sagagi, 2017). As Nigeria aims to achieve 30% renewable energy penetration by 2030, the environmental sustainability implications of energy sector operations have therefore become increasingly critical.

The continuous global expansion of economic activities by companies and the attendant consequences on the environment have generated widespread concern over unsustainable business

practices. These activities have contributed significantly to global environmental degradation and pose serious threats to climate stability and ecosystem sustainability. Environmental challenges arising from climate change remain among the most pressing issues confronting policymakers, regulators, investors, and academics in the 21st century. The United Nations Framework Convention on Climate Change (UNFCCC) has emphasized that human activities resulting in carbon emissions—such as carbon dioxide (CO<sub>2</sub>), nitrogen oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>), chlorofluorocarbons, and other greenhouse gases (GHGs)—as well as the depletion of blue carbon ecosystems, play a critical role in global warming and climate change. In this context, corporate accountability, transparency, and disclosure have become central to addressing environmental externalities, particularly in emerging economies characterized by governance challenges (Bello & Sagagi, 2017).

In recent times, there have been sustained agitations by various stakeholder groups for companies to disclose climate-related risks and governance practices, especially within energy-intensive sectors whose operations are highly carbon-intensive. Disclosure is viewed as a mechanism for reducing information asymmetry between firms and stakeholders, thereby enhancing accountability and informed decision-making (Ramalan, Kurfi, Bello, & Saifullahi, 2021). It is noteworthy that

emissions from the transport sector alone accounted for approximately 47.76% of CO<sub>2</sub> emissions in Nigeria between 2000 and 2014 (International Energy Agency, 2015), underscoring the urgency for transparent environmental reporting and effective governance mechanisms within carbon-intensive industries.

The World Economic Forum (2020) stressed that failure to mitigate the adverse effects of climate change significantly heightens environmental and economic risks. In response to increasing stakeholder pressure, many firms—particularly in developed economies—have demonstrated greater willingness to disclose the environmental impacts of their operational activities and to implement mitigation strategies (KPMG, 2022). This aligns with the growing emphasis on Corporate Social Responsibility (CSR), which has evolved into a core element of corporate strategy, as firms are increasingly evaluated not only on financial performance but also on ethical conduct, environmental stewardship, and social contributions (Felicia, Aliyu, & Bello, 2025). Similarly, global efforts to mitigate carbon emissions have intensified in line with the Paris Agreement targets (IPCC, 2018).

In Nigeria, a developing economy with notable environmental challenges, various policy efforts have been undertaken following its identification as a country facing significant environmental risks. The World Bank's 2022 Global Gas Flaring Tracker Report ranked Nigeria as

the ninth highest gas-flaring country globally, while the World Resources Institute reported that Nigeria ranked 90th among global carbon emitters in 2019. According to Omaliko et al. (2021), the energy sector is among the most carbon-sensitive industries in Nigeria, with estimated carbon emissions of about 90 million metric tons in 2010, largely attributable to gas flaring. These environmental challenges further highlight the need for robust governance frameworks and enhanced corporate disclosure practices (Bello, Kurfi & Tijjani, 2021).

Nigeria ratified the Kyoto Protocol on December 10, 2004, covering the first commitment period of 2008–2012, and subsequently ratified the Doha Amendment representing the second commitment period (2013–2020). Nigeria further ratified the Doha Amendment on October 2, 2020, marking the third ratification. The core objective of the Kyoto Protocol is to reduce carbon emissions, which constitute a major driver of environmental degradation and climate change. In line with these international commitments, the Nigerian government enacted the Climate Change Act, 2021, to align domestic climate policy with the UNFCCC and Kyoto Protocol, support the achievement of the Sustainable Development Goals (SDGs), and contribute to global efforts to reduce greenhouse gas emissions.

Currently, carbon emissions disclosure in Nigeria remains largely voluntary.

However, there are indications of a gradual shift towards mandatory environmental sustainability reporting. This is reflected in the Financial Reporting Council of Nigeria's (FRCN) 2024 roadmap for the adoption of IFRS S1 and IFRS S2 Sustainability Disclosure Standards. Phase 3 of the adoption framework introduces mandatory sustainability reporting for all public interest entities—excluding government entities—effective from January 1, 2028, while Small and Medium-Sized Enterprises (SMEs) are expected to adopt mandatory reporting from January 1, 2030. This transition reinforces the role of disclosure as a governance mechanism for reducing information asymmetry and strengthening stakeholder confidence (Ramalan, Kurfi, & Bello, 2021).

In view of the foregoing, the role of corporate governance mechanisms, particularly board diversity, has been widely acknowledged as having significant implications for carbon emissions disclosure. The board of directors, as the apex decision-making body, is responsible for setting strategic direction, overseeing management actions, and ensuring compliance with regulatory and societal expectations (Bello, Kurfi, & Tijjani, 2021). Board diversity in terms of independence, gender composition, nationality, and professional expertise is believed to influence firms' commitment to transparency and sustainability reporting. Independent directors enhance objectivity and accountability in disclosure decisions,

while gender-diverse boards tend to place greater emphasis on sustainability and risk management. Similarly, board members with diverse national backgrounds and environmental or technical expertise bring global perspectives on climate regulation and best practices, thereby strengthening carbon emissions disclosure and environmental governance.

Carbon Emissions Disclosure (CED) represents a critical dimension of environmental reporting, yet it remains underdeveloped among Nigerian firms relative to advanced economies. Empirical evidence in this area remains limited, making Nigeria a compelling context for examining CED practices. Moreover, CED provides insight into the strategic oversight role of boards of directors in promoting transparency and effective monitoring mechanisms. Scholars have argued that strengthening corporate governance structures constitutes a key strategy for achieving decarbonization targets, with board diversity playing a central role in fostering sustainable development and enhanced disclosure practices. Prior studies have examined the relationship between financial performance and CED (Abubakar et al., 2021; Alsaifi et al., 2019; Onyebuenyi et al., 2023), the association between firm value and CED (Issa et al., 2024; Kurnia et al., 2020), and the influence of earnings management on CED (Astari et al., 2020). In view of the aforementioned, some previous studies have also investigated the relationship between board diversity (board independence, board gender

diversity, board nationality and board expertise) and carbon emission disclosure. In fact, Amisshah, (2025) argue that board independence can contribute to board diversity by bringing external perspectives and reducing groupthink. These have been carried out by Bedi and Singh (2024), Chakraborty and Dey (2023), Mardini and Lahyani (2024) and Saadah et al. (2024). However, most of these studies were conducted in Asian countries. Limited evidence exists on the relationship between board diversity and carbon emission disclosure in African countries like Nigeria. Also, less attention has been given how board expertise affects CED by prior studies.

Moreover, this study aims to address the gaps of few studies in Nigeria that have considered the impact of board diversity on CED. Therefore, the study contributes to the empirical literature on factors influencing carbon emissions disclosure in emerging markets, with reference to Nigeria. Thus, adding fresh insights on the subject matter and extending the frontiers of knowledge. The findings of the study would benefit stakeholders, including shareholders, regulatory bodies, managers, policymakers, and practitioners. It would also be of benefit to academics, students and future researchers, as it would serve as good reference material and a benchmark for future research.

The main objective of this study is to ascertain the effect of board diversity on carbon emission disclosure of listed

energy firms in Nigeria. The specific objectives are to examine the effect of board independence, board gender diversity, board nationality and board expertise on carbon emission disclosure of listed energy firms in Nigeria. The hypotheses of the study was that there is no significant impact of board diversity on carbon emission disclosure of listed energy companies in Nigeria.

## **2. Literature Review**

The study discussed conceptual meaning, review empirical studies and the underpinning theory.

### **2.1 Conceptual Review**

Recent studies define board independence as directors' ability to make decisions without undue influence, with Amo-Navas et al. (2025) noting independent directors meet formal independence criteria. Al-Shaer et al. (2023) highlight board independence's impact on company performance. Board gender diversity refers to the mix of men and women in decision-making (Terjesen et al., 2016), with Onatuyeh and Ukolobi (2020) defining it as the proportion of female directors. Board nationality diversity involves directors from different countries (Nielsen & Nielsen, 2011). Board expertise is the collective knowledge and experience of directors (Kor & Sundaramurthy, 2009).

### **2.2 Empirical Review**

This study provides a review of relevant literature on board diversity and carbon disclosure. For example, Lahyani (2022)

investigated how board diversity impacts carbon disclosure in France. Data used were extracted on 120 non-financial listed companies in France covering 2010 to 2019. GMM results show that board independence and nationality have significantly and positively impact carbon disclosure, while gender diversity showed no statistically significant effect. Similarly, Kılıç and Kuzey (2019) found board independence and board nationality increase the likelihood of disclosing carbon emission information. Gender diversity, however, has insignificant influence on carbon disclosure. The study utilized data drawn from Turkish non-financial companies spanning the years 2011 to 2015. Stakeholder and legitimacy theory were employed as the study's theoretical basis.

Bedi and Singh (2024) conducted a study on how corporate governance influences CED in India. Board independence and gender diversity were among the corporate governance attributes examined, drawing upon agency and stakeholder theories. Panel data were collected on 500 listed Indian companies covering 2016 to 2022. Findings shows that board independence and gender diversity had a statistically significant impact on CED.

In addition, Chakraborty and Dey (2023) also examined how corporate governance mechanisms influences carbon disclosure from legitimacy, agency and stakeholder theory viewpoint. Panel data was collected from Bangladesh firms covering 2015 to 2019, totalling 250 firm-year observations. Findings indicate that board

independence significantly and positively impacts corporate CED, while gender diversity was found to have an insignificant impact on corporate carbon disclosure. Mardini and Lahyani (2024) examined how board attributes impact carbon disclosure using cross-sectional data from 120 French quoted firms. The study was anchored in stakeholder theory. Findings from the GMM analysis show that board independence positively influences carbon disclosure, whereas board gender diversity does not exhibit a significant influence on carbon disclosure. Saadah et al. (2024) explore the influence of female representation in top management on CED through the lens of upper echelon theory. The study used regression analysis to analyze data from 146 ASEAN banks covering the period 2018 to 2022. The findings indicate that female directors significantly and positively impact CED. Similarly, Caby et al. (2024) explored how board gender diversity affects carbon disclosure, utilizing data from 138 technology companies between 2014 and 2020. Their results also reveal that women's participation on boards significantly enhances both the extent and quality of CED.

### **2.3 Research Framework/Model and Underpinning Theory**

Stakeholder theory, introduced by Freeman (1984), asserts that company's accountability and responsibilities go beyond only shareholders but to various other stakeholders, such as regulators, consumers, and employees. The theory

assumes that long-term survival is linked to effectively managing these relationships, particularly when stakeholders apply pressure related to environmental concerns. The board is responsible for addressing and balancing diverse stakeholders' needs and interests. Thus, the diversity of the board can enhance its capacity in identifying and addressing diverse stakeholders' needs and interests. Stakeholder theory highlights the importance of board members' independence in addressing and safeguarding various stakeholders' rights and interests (Gul & Leung, 2004). Independent directors can be seen as effective monitors for overseeing management opportunistic behavior and

enhancing firms' engagement in environmental disclosure practices. In this context, board diversity, such as gender, nationality and expertise, can be seen as strategic resources that allow the board to have access to diverse perspectives, values, knowledge, skills and networks, which can enhance environmental responsiveness and disclosure practices. The research framework is shown below:

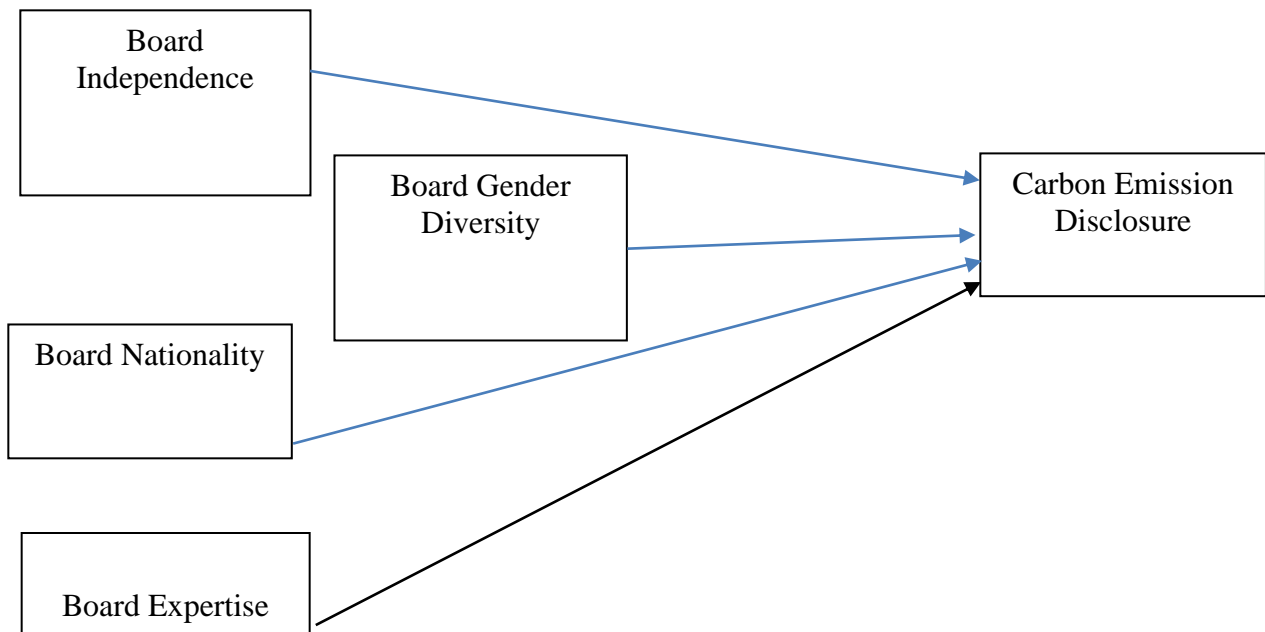


Fig. 1: Conceptual framework

### 3. Method

This study employed causal research design to examine the impact of board diversity on CED. Causal research design is used to identify cause-and-effect relationships between variables. Therefore, board diversity and carbon emissions disclosure, a causal design can help determine whether changes in board independence, gender diversity, nationality, or expertise directly influence carbon emissions disclosure. The population includes all seven (7) listed energy firms on the Nigeria Exchange Group. The population are Aradel Holdings Plc, Oando Plc, Seplat Energy Plc, TotalEnergies Marketing Nigeria Plc, Conoil Plc, Eterna Plc and Geregu Power Plc. They are into downstream, upstream activities as well as power generation. This study covered 10 years, 2014 to 2023. The scope of the study is justified by several factors. This period marks a

time of recovery from the global financial crisis, allowing for a relatively stable economic context. It also coincides with an increased global focus on sustainability and environmental concerns, such as the Paris Agreement in 2015. Additionally, Nigeria implemented various economic reforms during this time, impacting the energy sector and corporate governance. The 10-year period provides sufficient data for analysis, capturing trends and changes in board diversity and carbon emissions disclosure, while remaining relevant to current policies and regulations.

Companies with incomplete data on the variables of the study were filtered out. The final sample comprises seven listed energy firms in Nigeria. The measurements of the variables are explained in table 1 below.

**Table 1. Variables Measurements**

Variables	Measurements	Data	Sources
Dependent variable			
Carbon Emission Disclosure	A disclosure index score based on a checklist derived from GRI 305.	Annual/Sustainability Report	<u>Omaliko, et. al. (2021), Lahyani, (2022), Kurnia, et. al. (2020)</u>
Independent variables			
Board Independence	Ratio of independent directors to the overall board size	Annual Report	Caby, et. al. (2024). Gul, & Leung, (2004).
Board Gender	Ratio of female board members to the overall board size	Annual Report	Caby, et. al. (2024). Gul, & Leung, (2004).
Board Nationality	Ratio of foreign directors to the overall board size	Annual Report	Caby, et. al. (2024). Gul, & Leung, (2004).
Board Expertise	Number of directors with financial expertise divided by overall board members	Annual Report	Caby, et. al. (2024). Gul, & Leung, (2004).
Control variables			
Profitability	Profit after tax divided by total assets	Annual Report	Idamoyibo (2024), Chukwu & Efanga (2025)
Leverage	Ratio of total liabilities to total assets	Annual Report	Akinninyi (2025)
Firm Age	Number of years from incorporation	NGX	Idamoyibo (2024), Chukwu & Efanga (2025)

Source: Authors Compilation (2025)

The following model is constructed to examined the impact of board diversity on CED.

Model:

$$CED_{it} = \beta_0 + \beta_1 BIND_{it} + \beta_2 BGEN_{it} + \beta_3 BNAT_{it} + \beta_4 BFEXP_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} + \beta_7 FAGE_{it} + \epsilon_{it}$$

$\beta_0$  denotes a constant,  $\beta_1$ - $\beta_4$  stands for coefficients of the explanatory variables, and  $\beta_5$ - $\beta_7$  stand for control variables coefficients. CED stands for carbon emission disclosure, BIND for board independence, BGEN for board gender diversity, BNAT for board nationality, BEXP for board expertise, ROA for profitability, LEV for leverage, FAGE for firm age and  $\epsilon$  is for the error term.

#### 4. Result and Discussion

The study presents the following result and discussions.

Table 2 Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
CED	70	0.073	0.175	0.000	0.857
BIND	70	0.150	0.181	0.000	0.545
BGEN	70	0.164	0.101	0.000	0.375
BNAT	70	0.188	0.207	0.000	0.636
BEXP	70	0.155	0.087	0.000	0.375
ROA	70	0.006	0.249	-.716	1.763
LEV	70	0.764	0.297	.359	2.478
FAGE	70	39.071	17.410	5.000	67.000

Source: Survey (2025)

Based on the descriptive statistics above, the findings revealed that the average carbon emission disclosure is 7.3%, with a standard deviation (SD) of 0.175, signifying relatively low disclosure of carbon emission information among the sampled energy firms. The CED has a minimum of 0%, indicating some firms did not disclose any related carbon information during the period covered. The average of board independence is 15%, indicating a relatively low percentage of independent directors among the sampled firms. The SD of 18.1% signifies that the sampled firms' board independence clusters together. The lowest and highest values are 0 and 0.545. The average of board gender diversity is 16.4%, indicating a relatively low representation of female directors among

the sampled companies. The standard deviation is 10.1%, suggesting a moderate variation from the mean. The min and max values are 0 and 0.374.

Board nationality has a mean and SD value of 18.8% and 20.7%, showing a low variance from the mean. The min and max values are 0 and 0.636. Board expertise has a mean and SD value of 15.5% and 8.7%, showing a moderate variation from the mean. The min and max values are 0 and 0.375. The average return on assets is 0.006 with SD of 0.249. The min and max values are -0.716 and 1.763. The mean score for leverage measured by total liabilities to total assets is 0.764, with SD of 0.297. The min and max values are 0.359 and 2.478. The min and max values of firm age are 5 and 67.

Table 3 Correlations Matrix

VARIABLES	CED	BIND	BGEN	BNAT	BEXP	ROA	LEV	FAGE
CED	1.000							
BIND	0.327	1.000						
BGEN	0.374	0.115	1.000					
BNAT	0.372	0.060	0.210	1.000				
BEXP	0.079	0.439	0.176	-0.049	1.000			
ROA	0.039	-0.057	0.111	0.084	-0.065	1.000		
LEV	-0.143	-0.336	-0.149	-0.292	-0.189	-0.280	1.000	
FAGE	-0.066	-0.545	0.164	0.230	-0.160	0.058	0.147	1.000

Source: Survey (2025)

Table 3 shows the correlations among the explained, explanatory and control variables. Findings indicate that all the four independent variables (board independence, gender diversity, nationality and expertise) have positive relationship with CED. Profitability also has positive relationships, while the other two control variables (leverage and firm age) have a negative relationship with CED. The table also displayed the correlation among the explanatory

variables. A correlation coefficient that exceeds 0.80 is deemed to be excessive (Gujarati, 2004). Table 3 shows that all the correlation coefficients among the explanatory variables are higher than 0.8. This signifies that harmful multicollinearity does not exist. However, this study uses Variance Inflation Factor (VIF) to further confirm the multicollinearity problem. The result is displayed in table 4 below.

Table 4. Variance Inflation Factor

	VIF	1/VIF
BIND	1.982	.504
BGEN	1.150	.87
BNAT	1.261	.793
BEXP	1.312	.762
ROA	1.132	.883
LEV	1.377	.726
FAGE	1.690	.592
Mean VIF	1.415	.

Source: Survey (2025)

Absence of multicollinearity is one of the main assumptions of the classical linear regression model (CLRM). High VIF values indicate a strong correlation between independent variables, which can negatively impact the regression model's

accuracy and interpretation. The result in table 4 above indicates that all the VIF values are less than the acceptable threshold of 5, indicating no issue of multicollinearity. In addition, the mean VIF is 1.415, which further suggests no

multicollinearity in the model. The results of other pre-estimation tests are shown in table 5 below

Table 5. Pre-estimations

Test	F/Chi - Statistics	P-value
Hausman (1978) specification test.	53.720	0.000
Modified-Wald test for group-wise heteroskedasticity.	1828.350	0.000
Wooldridge test for autocorrelation.	145.642	0.000

Source: Survey (2025)

The study conducted the Hausman test to choose which is more suitable between fixed-effect and random-effect models. The p-value of the Hausman test is significant, signifying that the fixed model is more appropriate. The study also tests for autocorrelation. The result shows a significant prob-value of 0.000. This implies there is presence of autocorrelation issues in the model. This study also tested for heteroscedasticity, which is another important assumption of CLRM. Heteroscedasticity means unequal variance in the errors. It contradicts the assumption of homoscedasticity and may result in incorrect conclusions. The result shows a prob-value of 0.000, which is

significant at 1%, indicating presence of heteroscedasticity.

This makes the fixed-effect regression not suitable, as the presence of heteroskedasticity and autocorrelation can cause biased panel regression estimators. The study addressed this issue by using the Panel-Corrected Standard Errors (PCSE) regression, as recommended by prior studies. The standard errors provided by PCSE are robust, ensuring valid statistical inference when dealing with the complex errors structure in panel data (Chen et al., 2010). The PCSE result is in table 6 below.

Table 6: PCSE Regression

CED	Coef.	St.Err.	t-value	p-value
BIND	0.3107	0.133	2.33	0.020
BGEN	0.5255	0.206	2.55	0.011
BNAT	0.2721	0.138	1.97	0.049
BEXP	-0.1750	0.142	-1.23	0.218
ROA	0.0149	0.034	0.45	0.656
LEV	0.0596	0.035	1.69	0.091
FAGE	-0.0005	0.001	-0.47	0.640
Constant	-0.1110	0.049	-2.26	0.024
Number of observations				70
R-Squared				0.3215
Chi-square				33.91
Prob > chi2				0.0000

Source: Survey (2025)

The PCSE model has a chi-square statistic of 33.91, and it is significant at 1%, indicating that the model is fit to estimate the relationship in the model. The R-square value of 32.15% means that the explanatory variables account for 32.15% of the variation in CED of the sampled firms. Based on the above PCSE regression results, board independence has a coefficient and p-value of 0.3107 and 0.020. The result denotes that board independence significantly and positively impacts CED. This indicates that an increase in the percentage of independent directors increases disclosure of carbon emission information. This aligns with the proposition of stakeholder theory that independent directors can effectively oversee management and ensure that the reporting of climate-related information aligns with shareholder interests. It is also in line with the results of Lahyani (2022), who found that board independence positively influences CED. But it contradicts the result of Bedi and Singh (2024) who found that board independence has an insignificant effect on CED. Hence, hypothesis one is supported.

Board gender diversity significantly and positively impacts CED, as indicated by the coefficient and prob-value of 0.5255 and 0.011. This implies that having female representation on the board will likely improve CED in energy firms. This result aligns with resource dependency theory and the results of Saadah et al. (2024) who found that board gender

diversity positively influences CED. But it contradicts the result of Bedi and Singh (2024) and Lahyani (2022), who found board gender diversity to have an insignificant effect on CED. Hence, hypothesis two is supported.

Similarly, board nationality significantly and positively impacts CED, evidenced by the coefficient and p-value of 0.2721 and 0.049. Hence, hypothesis three is supported. This implies that increase in the proportion of foreign directors enhances CED in energy firms. This aligns with resource dependency theory and the findings of Kılıç and Kuzey (2019) and Lahyani (2022), who found that board independence positively influences CED. However, board expertise was found to have an insignificant impact on CED, evidenced by the prob-value of 0.218. This means that the number of financial experts on board has no influence on carbon emission disclosure. Given that the p-value exceeds 5%, this study rejects the fourth hypothesis.

## **5. Conclusion**

In recent decades, there has been growing stakeholder pressure on companies to report carbon emission information. This research examined the impact of board diversity on CED. The diversity examined includes board independence, gender diversity, board nationality, and board expertise. PCSE regression has been employed for hypotheses testing using 70 firm-year observations. The results show

that board independence, board gender diversity and board nationality significantly and positively impact CED. However, board expertise has an insignificant effect on carbon emission disclosure. This study contributes to evolving knowledge and literature on corporate CED practices. It highlights the importance of diversity of board members in terms of independence, gender and nationality. The results have implications for policymakers, the board of directors, and other stakeholders. The corporate nomination committee can also get rich insights and understanding of which diversity is relevant for enhancing disclosure practices of the firm. The results will aid corporate governance code setters in setting the minimum composition of corporate boards.

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## 6. Implications/recommendations

The study recommends that energy companies prioritize board independence, gender diversity, and nationality diversity to enhance carbon emissions disclosure. Regulatory bodies should develop guidelines on board diversity to promote transparency and accountability in carbon emissions reporting.

Policy implications arise from these findings. Policymakers can leverage these insights to develop targeted guidelines promoting board diversity, particularly independence, gender, and nationality, to drive carbon emissions disclosure. This could involve incentivizing companies to adopt diverse boards and disclose emissions data, aligning with global sustainability goals.

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# EMPLOYEE INVOLVEMENT CULTURE, KNOWLEDGE INFRASTRUCTURE CAPABILITY AND ORGANIZATIONAL PERFORMANCE: A PROPOSED MODERATING FRAMEWORK FOR PENSION FUND ADMINISTRATORS IN NIGERIA

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## Abstract

*The study proposes a conceptual model examining how knowledge infrastructure capability comprising information technology infrastructure, organizational structure, and human resources affects organizational performance of Pension Fund Administrators (PFAs) in Nigeria. It introduces employee involvement culture as a moderating factor that can strengthen this relationship. Given the historically poor performance of PFAs, the study suggests that enhancing knowledge infrastructure, organizational culture, and technology adoption can improve outcomes. The model aims to deepen understanding of these relationships and provide practical insights for stakeholders in the pension sector. The study recommends future empirical testing of the model using robust techniques such as Partial Least Squares Structural Equation Modelling (PLS-SEM) to validate the moderating role of employee involvement culture.*

**Keywords:** Knowledge infrastructure capability, employee involvement culture, organizational performance

## 1. Introduction

In an increasingly competitive and knowledge-driven global economy, organizational performance has emerged as a critical concern for both scholars and practitioners. Organizations are under growing pressure to improve efficiency, sustain growth, and deliver value to stakeholders through the effective utilization of knowledge-based resources, such as knowledge infrastructure capability (Al-Dmour et al., 2020). Organizational performance refers to the extent to which public and private organizations achieve effectiveness and efficiency in the pursuit of their objectives

(Fatafta et al., 2019). Consistent with the multidimensional view of performance in the literature, organizational performance encompasses both financial and non-financial dimensions, reflecting how effectively and efficiently organizations deploy their resources to meet stakeholder expectations and achieve overall goals (Felicia, Aliyu, & Bello, 2025). While financial indicators such as profitability and growth remain important, non-financial outcomes, including reputation, innovation capability, employee commitment, and stakeholder relationships are increasingly recognized as critical drivers of long-term

organizational success, particularly in the context of corporate social responsibility (Felicia et al., 2025). Janadari (2020) further noted that the inefficient utilization of resources can significantly undermine organizational performance.

The performance of Pension Fund Administrators (PFAs), particularly in terms of their contribution of pension assets to economic development as measured by Gross Domestic Product (GDP), varies considerably across countries. For instance, the Organisation for Economic Co-operation and Development (OECD) Global Pension Statistics (2024) indicate that the contribution of pension assets to GDP remains relatively low in many selected jurisdictions. In Nigeria, pension assets account for only 8.1% of GDP, which is significantly lower than the contributions recorded in other countries such as Kenya (13.7%), Papua New Guinea (16.9%), Malawi (17.1%), and Botswana (58.0). This comparatively low contribution has been largely attributed to the poor performance of PFAs (OECD, 2024). At the domestic level, the National Pension Commission (PenCom) Report (2025) further reveals that 368,911 Retirement Savings Account (RSA) holders transferred a total of ₦1.77 trillion from one PFA to another following the commencement of the transfer window, largely due to dissatisfaction with PFA performance.

The persistent poor performance of Pension Fund Administrators (PFAs) has prompted growing concern among key

stakeholders in Nigeria's pension system. Notably, the Head of the Civil Service of the Federation, alongside several Permanent Secretaries, reportedly sought presidential approval to exit the Contributory Pension Scheme due to dissatisfaction with PFA performance (Umar, 2023). Similarly, legislative actions signed into law in 2017 and 2023 by President Muhammadu Buhari excluded personnel of the Nigerian Intelligence Agency (NIA) and the National Assembly Service (NASS) from the Contributory Pension Fund, largely in response to concerns over the poor performance of PFAs (Olafusi, 2023). Pension contributors and retirees have also expressed strong dissatisfaction, staging protests and public agitation against the perceived inefficiency of PFAs in Nigeria (Iwunze, 2023). Furthermore, the Nigerian Senate has mandated its Committee on Anti-Corruption and Financial Crimes to investigate the activities of PFAs due to persistent performance-related concerns (Salau, 2023). Despite these challenges, evidence suggests that pension reforms, the adoption of modern management strategies, enhanced knowledge infrastructure capability, supportive organizational culture, and technological advancement may significantly improve the performance of PFAs (Achadinha, 2020).

Employee involvement culture refers to the degree to which employees are empowered to participate actively in meaningful decision-making, problem-

solving, and continuous improvement processes within an organization (Lawler, 1996). Empirical evidence indicates that an employee involvement culture is positively associated with organizational performance (Ologbo & Sofian, 2013). From a theoretical perspective, employee involvement culture is consistent with the Resource-Based View (RBV) of the firm, which posits that valuable, rare, and inimitable human resources constitute a key source of sustained competitive advantage (Barney, 1991).

Knowledge infrastructure capability enables organizations to effectively create, store, share, and apply knowledge (Gold, Malhotra, & Segars, 2001). It encompasses key organizational components—namely information technology infrastructure, organizational structure, and human resources—that collectively support knowledge flows and organizational learning. Empirical evidence suggests that organizations with strong knowledge infrastructure capabilities are better positioned to harness employee expertise, improve the quality of decision-making, and ultimately enhance organizational performance (Lee & Choi, 2003; Mills & Smith, 2011). However, the effectiveness of these infrastructures is often contingent upon the presence of complementary cultural attributes that promote employee involvement and facilitate knowledge sharing.

The emergence of the knowledge-based economy in the mid-1990s as a key driver

of organizational performance has compelled organizations to adapt their managerial practices and technological systems in order to enhance efficiency and competitiveness (OECD, 2024). Consequently, beyond traditional physical resources, intangible resources and capabilities particularly knowledge infrastructure capability has become increasingly important in facilitating organizational performance (Liao, et al, 2012). In addition, employee involvement culture is recognized as a critical intangible resource that organizations can leverage to strengthen the effectiveness of knowledge infrastructure capability in improving performance outcomes (Onyango, et al, 2022).

Given the strategic importance of knowledge infrastructure capability in shaping organizational performance, there is a compelling need to empirically examine the extent to which employee involvement culture moderates the relationship between knowledge infrastructure capability and organizational performance.

## **1.2 Statement of the Problem**

The failure of organizations to effectively adopt and manage infrastructure capabilities specifically information technology infrastructure, organizational structure, and human resources as critical strategic resources for enhancing performance has contributed significantly to poor organizational performance in recent times (Surchi, 2025). As contemporary organizations increasingly

operate in knowledge-driven environments, the strategic management of these infrastructure capabilities has become essential for achieving sustainable performance outcomes.

Empirical studies examining the relationship between knowledge infrastructure capability (information technology infrastructure, organizational structure, and human resources) and organizational performance have produced inconsistent findings. Several studies have reported a positive relationship between knowledge infrastructure capability and organizational performance (e.g., Saputri, 2025; Enstroem; et al, 2025; Al-Tabtabae & Harbiun, 2022; Foli & Timiyo, 2022; Tessema, et al, 2025). Conversely, other studies have documented negative or insignificant relationships between knowledge infrastructure capability and organizational performance (e.g., Surchi, 2025; Chiu & Chen, 2016; Abualoush, et al, 2018; Mills & Smith, 2020; Parayitam, et al, 2025; Aldilami & Al-Murhadi, 2025). To address such inconsistencies and contradictory findings in empirical research, scholars have recommended the introduction of moderating variables to better explain the conditions under which relationships among constructs hold (Baron & Kenny, 1986; Lowry & Gaskin, 2014). In line with this recommendation, the present study introduces employee involvement culture as a moderating variable.

Furthermore, a review of the literature indicates that prior studies on knowledge infrastructure capability and organizational performance have employed diverse qualitative and quantitative research approaches, including in-depth interviews, focus group discussions, content analysis, and mixed-method designs (Mills & Smith, 2020; Parayitam et al., 2025; Saputri, 2025; Enstroem, et al, 2025; Al-Tabtabae & Harbiun, 2022; Foli & Timiyo, 2022; Aldilami & Al-Murhadi, 2025). While these methods provide valuable insights, they often limit the ability to study large populations and may not adequately capture complex relationships among variables (Fujii, 2018). Moreover, such techniques offer limited modelling capabilities, particularly for examining causal relationships and interaction effects among multiple constructs (Lowry & Gaskin, 2014). Consequently, this study proposes the adoption of Partial Least Squares Structural Equation Modelling (PLS-SEM), which is well suited for analysing complex models involving moderation effects.

In addition, existing empirical studies on knowledge infrastructure capability and organizational performance have been conducted across diverse national and industrial contexts (e.g., Saputri, 2025; Enstroem; Kang & Bhawna, 2025; Al-Tabtabae & Harbiun, 2022; Foli & Timiyo, 2022; Surchi, 2025; Chiu & Chen, 2016; Abualoush et al., 2018; Mills & Smith, 2020; Parayitam et al., 2025; Aldilami & Al-Murhadi, 2025), with

limited attention given to the pension industry, particularly Pension Fund Administrators (PFAs) in Nigeria. As a result, the findings of these studies may not be readily generalizable to the Nigerian context due to contextual and cultural differences.

Arising from the foregoing, this study seeks to address critical gaps in the literature on organizational performance by: (1) examining the influence of knowledge infrastructure capability comprising information technology infrastructure, organizational structure, and human resources on organizational performance; and (2) investigating the moderating role of employee involvement culture in the relationship between knowledge infrastructure capability and organizational performance. To the best of the researcher's knowledge, no prior study has empirically examined the moderating effect of employee involvement culture on the relationship between knowledge infrastructure capability and organizational performance, nor the combined effect of the dimensions of knowledge infrastructure capability on organizational performance within the Nigerian pension sector. This study therefore provides a strong justification for empirically testing the proposed relationships using PLS-SEM.

## **2.0 Literature Review**

### **2.1 Organizational Performance**

Organizational performance is one of the most extensively examined constructs in

management research and remains a central concern for both scholars and practitioners. It represents a critical domain of management inquiry that has attracted increasing scholarly attention in recent years (Janadari, 2020). Organizational performance is inherently multidimensional and constitutes a primary objective of both public and private sector organizations (Novak, 2017). According to Fatafta, et al, (2019), organizational performance is influenced by multiple factors that enable organizations to survive and thrive through the satisfaction of stakeholder expectations. As such, organizational performance serves as a key indicator of organizational success (Koohang, et al, 2017).

The Balanced Scorecard (BSC) framework developed by Kaplan and Norton (1996) demonstrates that organizations employ diverse performance measures to monitor progress and effectively communicate strategic objectives to stakeholders. The BSC integrates both financial and non-financial dimensions in the assessment of organizational performance. Denison and Mishra (1995) further argue that the attainment of both financial and non-financial objectives is essential for sustaining organizational competitiveness in the short and long term.

Financial performance is typically assessed using indicators such as return on investment (ROI), return on equity (ROE), return on assets (ROA), cost efficiency, sales performance, and growth rates. In contrast, non-financial

performance measures include product and service quality, customer satisfaction, timeliness of delivery, operational efficiency, effectiveness, responsiveness, equity, productivity, market share, employee satisfaction, strategic goal attainment, workforce development, and continuous improvement (Kaplan & Norton, 1996). Thus, for the purpose of this study, non-financial performance measures are adopted to assess the performance of Pension Fund Administrators (PFAs) in Nigeria, particularly in relation to knowledge infrastructure capability and the moderating role of employee involvement culture.

In today's knowledge-based economy, organizations increasingly rely on information technology (IT) infrastructure as a cost-efficient tool for enhancing operational efficiency and reducing response time to customers (Rasula et al., 2012; Zaied, 2012). IT infrastructure constitutes a critical component of knowledge management infrastructure, as it facilitates the creation, storage, sharing, and utilization of knowledge within and across organizational units, departments, and employees, thereby improving organizational performance. It supports efficient operations, effective inventory management, and the integration of organizational activities and processes (Liao, et al, 2015).

Sangeetha (2015) argues that IT infrastructure enhances organizational performance by improving collaboration

and communication, strengthening employee skills, supporting better decision-making, and increasing productivity. Similarly, Davenport and Prusak (1998) emphasize the central role of IT infrastructure in knowledge management, noting that it enables knowledge sharing, accelerates knowledge development, and enhances the speed and efficiency of information flow. Becerra-Fernandez and Sabherwal (2015) further contend that IT infrastructure facilitates rapid access to knowledge and improves organizational learning capabilities.

Information technology infrastructure has been defined as a set of electronic tools and systems that support knowledge generation, storage, sharing, transmission, and application both within and outside organizations (Nonaka, 1994; Gold et al., 2001; Imran et al., 2018). Chang and Chuang (2011) describe IT infrastructure as the technical systems that determine how knowledge is accessed, circulated, and utilized within organizations. In a similar vein, Gihtii (2021) views IT infrastructure as a mechanism that supports knowledge management activities by enabling the storage, preservation, and retrieval of knowledge through knowledge management databases.

Hajli, et al, (2015) conceptualize IT infrastructure as a combination of computer hardware, software, and communication technologies and examine how these elements are reflected in

organizational performance. Sandhawalia and Dalchen (2011) identify IT infrastructure as a vital mechanism for timely information acquisition, communication, knowledge mapping, structuring, dissemination, and opportunity creation. Tippins and Sohi (2003) define IT infrastructure as the extent to which organizations understand and effectively utilize information technology to manage organizational information.

Given its central role in facilitating knowledge acquisition, storage, communication, and sharing, this study adopts the conceptualization of IT infrastructure proposed by Gihtii (2021). This definition is particularly appropriate as it emphasizes the role of IT infrastructure in supporting frequent knowledge sharing among employees, thereby enhancing organizational performance.

### **2.2.2 Organizational Structure**

The flow of knowledge within organizations does not occur solely through traditional vertical or top-down channels; it also takes place through bottom-up and horizontal interactions supported by organizational structural infrastructure. Mintzberg (1983) defines organizational structure as the manner in which work is divided into distinct tasks, assigned, and coordinated to achieve organizational goals. It determines how responsibilities and authority are allocated and how tasks are executed by employees (Hunter, 2002).

Gold et al. (2001) conceptualize organizational structure as the formal arrangement of roles, responsibilities, tasks, and authority within an organization, including policies, procedures, hierarchical relationships, and functional boundaries. Similarly, Hall (1987) describes structure as the institutionalized patterns of interaction among organizational members, encompassing communication flows and clearly defined power relationships. Ali, et al, (2016) further explain organizational structure as a systematic arrangement of interrelated elements that interact to function as a unified whole within an organization.

Drawing from these perspectives, the present study defines organizational structure as a component of knowledge infrastructure capability that facilitates the effective conduct of knowledge-related activities through the division of responsibilities based on competence, specialization, and capability. A well-designed organizational structure supports efficient knowledge acquisition, storage, dissemination, and application, thereby enhancing organizational performance.

Empirical studies suggest that organizational structure significantly influences knowledge management processes and performance outcomes. For instance, transitions from rigid hierarchical structures to flatter and more flexible network-based structures have been shown to improve the acquisition, storage, transfer, and application of

knowledge (Gold et al., 2001). Such structural configurations also positively influence organizational performance by promoting learning, adaptability, and innovation (Fiol & Lyles, 1985)

### **2.2.3 Human Resource**

Human resources are indispensable to the successful operation of any organization and represent a core component of organizational memory. Employees are responsible for executing organizational activities and driving the achievement of organizational objectives. Given their central role within knowledge management infrastructure, organizations must encourage and support employee involvement in knowledge-related activities (Gharakhani & Mousakhani, 2012).

Rashdi, et al, (2022) argue that while some organizational resources exist in tangible forms, critical resources such as human capital reside within employees. Human resources therefore play a vital role in integrating and executing organizational activities, as well as in creating value from knowledge through their skills, expertise, and experience (Kushwaha & Rao, 2015).

Schuler and Jackson (1987) and Otoo (2019) define human resources as a system designed to attract, develop, motivate, and retain employees to ensure the effective execution of organizational activities. In this study, human resources are conceptualized as key organizational assets responsible for acquiring, storing,

sharing, and applying knowledge through employees' cognitive abilities, actions, values, beliefs, and assumptions. This definition emphasizes the organization's capacity to maintain an adequate workforce with the requisite skills and competencies to manage knowledge effectively.

Human resources constitute the intellectual core of organizations and possess the capability to acquire, share, and apply knowledge with the support of technological, cultural, and structural infrastructures. Consequently, human resources are fundamental to the creation, management, and utilization of organizational knowledge. Empirical evidence indicates that organizations with highly skilled, competent, and motivated employees achieve superior performance outcomes (Rashdi et al., 2022). This suggests that organizations with employees who possess strong cognitive abilities and who effectively utilize information technology for knowledge management are more likely to enhance organizational performance

### **2.2.3 Employee Involvement Culture (EIC)**

The concept of organizational culture has been interpreted in various ways since its emergence in the mid-twentieth century. Despite these diverse perspectives, scholars generally agree that culture comprises shared values, beliefs, assumptions, and norms communicated among organizational members (Tierney & Schein, 1986). From a group

perspective, culture represents the collective thoughts and actions of individuals that reflect an organization's strategic orientation (Dobni & Luffman, 2003).

Organizational culture plays a critical role in shaping strategy and guiding employee behaviour, making it a variable that organizations must consciously manage. It facilitates efficiency, effectiveness, responsiveness, and equity through effective communication among individuals, teams, clients, and other stakeholders (Norman, et al, 2022). In the contemporary knowledge-based economy, organizational culture is recognized as a complex and dynamic element of change management, encompassing both formal and informal components that evolve over time (Al-Shibami et al., 2019).

Several scholars, including Gordon and DiTomaso (1992), Kotter and Heskett (1992), Denison and Mishra (1995), and Sorenson (2002), developed models illustrating how organizational culture explains variations in organizational performance (Sparrow, 2001). These models identify employee involvement culture as a key cultural dimension that enhances organizational effectiveness and performance.

Kumari and Kumari (2014) define employee involvement culture as the empowerment and participation of employees in decision-making processes commensurate with their positions within the organization. Nwachukwu (2006)

argues that employee involvement culture strengthens employee commitment and facilitates the successful implementation of organizational change. Building on these perspectives, the present study conceptualizes employee involvement culture as a deliberate managerial approach aimed at expanding employees' responsibilities and participation at various organizational levels to enhance organizational performance.

## **2.3 Empirical Review**

### **2.3.1 Information Technology Infrastructure and Organizational Performance**

Saputri (2025) examined effect of IT infrastructure management on organizational performance using case study of organizations that have implemented IT infrastructure management strategies. The result showed that IT infrastructure management has significantly improves organizational performance through operational efficiency, system reliability, innovation and stakeholders satisfaction. The result of the study is judgemental on the ground that it used qualitative method which focuses on small sample which is not representative enough for drawing robust conclusion. Moreover, the study ignored the role employee involvement culture would have played as a moderator to influence the relationship between the constructs. This establishes a huge gap which current study seeks to address.

Similarly, Enstroem, et al, (2025) investigated impact of IT infrastructure on organizational performance using Harmonized Information Technology and Organizational Performance (HI-TOP) model. The result revealed that IT information enhanced organizational performance positively. The study excluded the moderating role of employee involvement culture which would have made more contributions. This indicate the need for further study to investigate the role employee involvement culture would play as a moderator on the relationship between strategic thinking and organizational performance.

AL-Tabtabae and Harbiun (2022) conducted a landmark study on the effect of knowledge infrastructure capability on sustainable organizational performance of civil hospitals in the Middle Euphrates region, Syria. In the study, information technology infrastructure was considered as one of the key components. The result indicates a statistically significant correlation between information technology infrastructure and sustainable performance. However, result of the study is not explicit considering the fact that it exclude the moderating role of employee involvement culture. More so, the sample size of sixty two used in the study is not sufficient for drawing robust conclusion. Thus, the result cannot be generalized. This reveals a huge gap which current study will fill.

Moreover, Foli and Timiyo (2022) systematically reviewed literature and

critically investigate the enablers of knowledge management infrastructure that potentially drives sustainable organizational performance of SMEs using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) methodological approach. Based on the synthesis, the study proposed a conceptual model which depicts the interrelationship between information technology infrastructure and organizational performance. The study assumed organizational performance is contingent upon information technology infrastructure. The major limitation of the study is that it has not been tested empirically. Thus, current study will fill this gap by suggesting further investigation into the relationship between the information technology infrastructure and organizational performance using empirical data on a platform of appropriate theory.

Kaldeen, et al, (2020) analysed the effect of IT infrastructure on organizational performance of Star rated Hotels in Sri Lanka. Finding shows that IT infrastructure indirectly influence organizational performance. However, their study was based on IT infrastructure as a predictor of organizational performance without considering other equally important variable such as the structure and human resource. Also, the multidimensional variables of the study would have made more contributions, especially where it is designed to include the moderating role of other equally important variable like employee involvement culture. Thus, finding of the study cannot be generalized. This

indicates a gap which current study will fill.

However, Surchi (2025) conducted a landmark study which investigated the role of management information technology in enhancing organizational efficiency. The study employed mixed method, combining content analysis of 50 peer-reviewed articles with quantitative survey of 120 managers from healthcare, manufacturing and education sectors. The result showed insignificant relationship between IT infrastructure and organizational performance. The findings of the study is judgemental given that the study focuses on other sectors without considering pension subsector. Similarly, the study excluded other equally important moderating variables such as employee involvement culture which would have made more contributions. Current study intends to fill this huge gap.

More so, Chiu and Chen (2016) did a study on the effect of knowledge management capabilities on organizational performance (effectiveness) in Taiwanese public utility: the mediator role of organizational commitment. The result shows that information technology infrastructure insignificantly influence organizational performance. The study used convenience sampling method which may lead to common sample bias and thus, will not provide a more comprehensive result. Also, the findings of the study are not explicit on the grounds that the study laid more emphasis on organizational

effectiveness which is a component of organizational performance without including other equally important components of organizational performance. Therefore, the study cannot be generalized. This indicates a huge gap present study will fill.

More so, Abualoush, et al, (2018) undertook study on the interrelationships among knowledge management infrastructure, knowledge management process, intellectual capital, and organizational performance. The results indicated that information technology infrastructure has negative relationship with organization performance. Although the study has filled a knowledge gap, but the result is judgemental on ground that it focused only on food industry in Jourdan and did not consider pension industry. Also, the study employed convenient sampling technique which is bias and does not provide appropriate sample representative enough for drawing robust conclusion. This pauses a threat to generalization of the findings.

Likewise, Mills and Smith (2020) investigated the linkage between business strategy and knowledge management capabilities for organizational effectiveness using a sample of 189 managers. The result shows a negative relationship between information technology infrastructure and organizational performance. However, since the study did not separate data used for the analysis of organizational performance on the basis of subjective or

objective measure, consequently, it is not clear whether subjective measure made significant contribution or not. More so, given that the study eliminates other variables such as employee involvement culture which would have made more impact, the result cannot be generalized. This reveals a huge gap in the literature which present study will address.

### **2.3.2 Organizational Structure and Performance**

In a landmark study was conducted by AL-Tabtabae and Harbiun (2022) on the effect of knowledge infrastructure capability on sustainable organizational performance of civil hospitals in the Middle Euphrates region, Syria. The result shows that organizational structure significantly influence sustainable performance. The result of the study is judgemental on the ground that it ignored the contributions of other equally important variables such as employee involvement culture. Moreover, the sample size of sixty-two is not sufficient enough for coming up with robust conclusion. Thus, current study will fill this gap using appropriate data for the analysis.

However, Kolotova (2018) did a study titled influence of knowledge management practices on organizational performance: empirical research at Russian SME's. The study considered the effect of organizational structure as one of the major constructs of knowledge infrastructure capability on organizational performance. It used online survey to

collect data from the respondents through questionnaire. The result show that organizational structure negatively influences organizational performance. However, given the fact that the population of the study is only forty-one (41), the finding cannot be generalized because the sample size is not representative enough for drawing a robust conclusion. Also, the study did not consider other equally important variables employee involvement culture which would have made more contributions. Thus, current study will address these gaps by considering the variables on a platform of appropriate theory with sufficient empirical data.

In another landmark study conducted by Aldilami and Al-Murhadi (2025) titled alignment between organizational structure and strategy and its impact on organization's performance in Yemen. The study employed SEM to analyse data obtained form (305) managers of (43) organizations. The result show absence of alignment between organizational structure and organizational performance. Nonetheless, the result could be judgemental on the ground that ignored moderating role of other equally important variables such as employee involvement culture which would have made contribution. Thus, current study will fill these huge gaps.

### **2.33.3 Human Resource and Organizational Performance**

Al-Tabtabae and Harbiun (2022) examined the effect of knowledge infrastructure capability on the sustainable organizational performance of civil hospitals in the Middle Euphrates region of Syria. Their findings revealed a significant positive relationship between human resources and organizational performance. However, the generalizability of the results is limited because the study excluded employee involvement culture as a moderating variable, which could have provided deeper insights into the relationship. This omission represents a notable gap that the current study seeks to address.

Similarly, Rashdi, et al, (2022) investigated the effects of knowledge management processes and infrastructure on organizational performance, while also examining the moderating roles of organizational trust and support. The results demonstrated that human resources exert a significant influence on organizational performance. The authors recommended that future studies incorporate additional moderating variables, such as employee involvement culture, to further elucidate these relationships. Moreover, the study did not disaggregate the data based on public and private sector organizations, making it difficult to determine the extent to which each sector contributed to the findings. Consequently, the results may be misleading. The present study addresses

this limitation by focusing on a specific sector.

Tessema, et al, (2025) explored the effect of human resource analytics on organizational performance in Ethiopia, using data collected from 269 respondents across 66 organizations in Addis Ababa. The findings indicated that human resources significantly influence organizational performance. Nonetheless, the study's findings have limited generalizability due to the exclusion of the pension subsector, which could have provided additional explanatory power. Furthermore, the study largely ignored the role of employee involvement culture, leaving a critical gap in the literature. The current study aims to bridge this gap by examining employee involvement culture as a moderating variable within the pension subsector.

Empirically, Parayitam, et al, (2025) investigated the relationship between human resource management practices, knowledge management practices, and organizational performance in the Indian healthcare industry. The results revealed an insignificant linear relationship between human resource practices and organizational performance. Although the study employed a relatively balanced regional sample, a larger sample size could have enhanced the generalizability of the findings. In addition, the study focused primarily on human resource practices while overlooking other critical factors, such as employee involvement culture, that may influence organizational

performance. This oversight highlights a substantial gap in the literature that the present study intends to fill.

#### **2.4 Employee Involvement Culture (EIC) as a Moderator**

Every organization is distinctive and operates within a unique cultural context that shapes its activities and practices. Organizational culture refers to the shared system of values, beliefs, behaviours, and ideas established by an organization to guide employees in the execution of organizational activities. It serves as a driving force that propels the organization forward and creates an operational environment in which employees collectively strive to achieve organizational goals (Narayana, 2017). Consequently, understanding organizational culture is essential for employees, stakeholders, and organizations as a whole, given its critical role in promoting efficiency, effectiveness, responsiveness, and equity within organizations (Djangone et al., 2021; Norman, et al, 2022).

Despite the universal pursuit of improved organizational performance within diverse cultural settings, it remains important to understand the extent to which organizational culture influences performance outcomes. In response to this need, the present study introduces employee involvement culture to examine its moderating role in the relationship between knowledge infrastructure capability—comprising information technology infrastructure, organizational

structure, and human resources—and organizational performance. The inclusion of employee involvement culture is justified by empirical evidence identifying it as a critical explanatory factor of organizational performance (Saleem & Ilkhanizadeh, 2021; Baba & Audu, 2021; Mananeka, et al, 2021). Furthermore, previous studies have validated the moderating influence of organizational culture on organizational relationships (Irianto & Basbeth, 2021; Maswadeh & Al-Zumot, 2020).

However, existing studies on knowledge infrastructure capability have largely overlooked the moderating role of employee involvement culture in explaining how knowledge infrastructure capability affects organizational performance. Saliani and Eslami (2016) contend that organizational culture can actively engage employees in knowledge-related activities, thereby enhancing organizational performance. This assertion underscores the fact that employee behaviour is strongly shaped by prevailing cultural factors, suggesting that employee involvement culture should be examined within the broader organizational culture framework.

Accordingly, this study introduces employee involvement culture as a moderating variable in the relationship between knowledge infrastructure capability and organizational performance, with a specific focus on Pension Fund Administrators (PFAs) in Nigeria. This approach is grounded in the

premise that employees in PFAs may be actively involved in knowledge infrastructure activities that enhance organizational performance. Therefore, the study posits that employee involvement culture moderates the relationship between knowledge infrastructure capability namely IT infrastructure, organizational structure, and human resources—and organizational performance. It is further assumed that a strong employee involvement culture amplifies the positive influence of knowledge infrastructure capability on organizational performance within the Nigerian context

### **2.5 Research Framework/Model and Underpinning Theory Knowledge-Based View (KBV)**

The Knowledge-Based View (KBV) posits that the resource base of organizations is largely composed of knowledge-based assets (Roos, et al, 1997; Stewart, 1997; Sveiby, 2001; Marr, 2004). The theory asserts that organizational performance can be effectively enhanced through the acquisition, management, sharing, and utilization of knowledge resources, supported by appropriate infrastructural capabilities. Within this perspective, knowledge is regarded as one of the most critical, unique, and scarce strategic resources available to organizations (Grant, 1996).

Knowledge management capability refers to an organization's ability to acquire, protect, and disseminate knowledge, as

well as to motivate employees to share knowledge through suitable infrastructural mechanisms in order to achieve optimal organizational performance (Liu, Chen, & Tsai, 2004). Effective knowledge management capability enhances organizational efficiency, effectiveness, and responsiveness (Borho, et al, 2012; Lee, et al, 2012). Consequently, only organizations that manage their knowledge resources efficiently and effectively are likely to attain superior performance outcomes (Zack, et al, 2009).

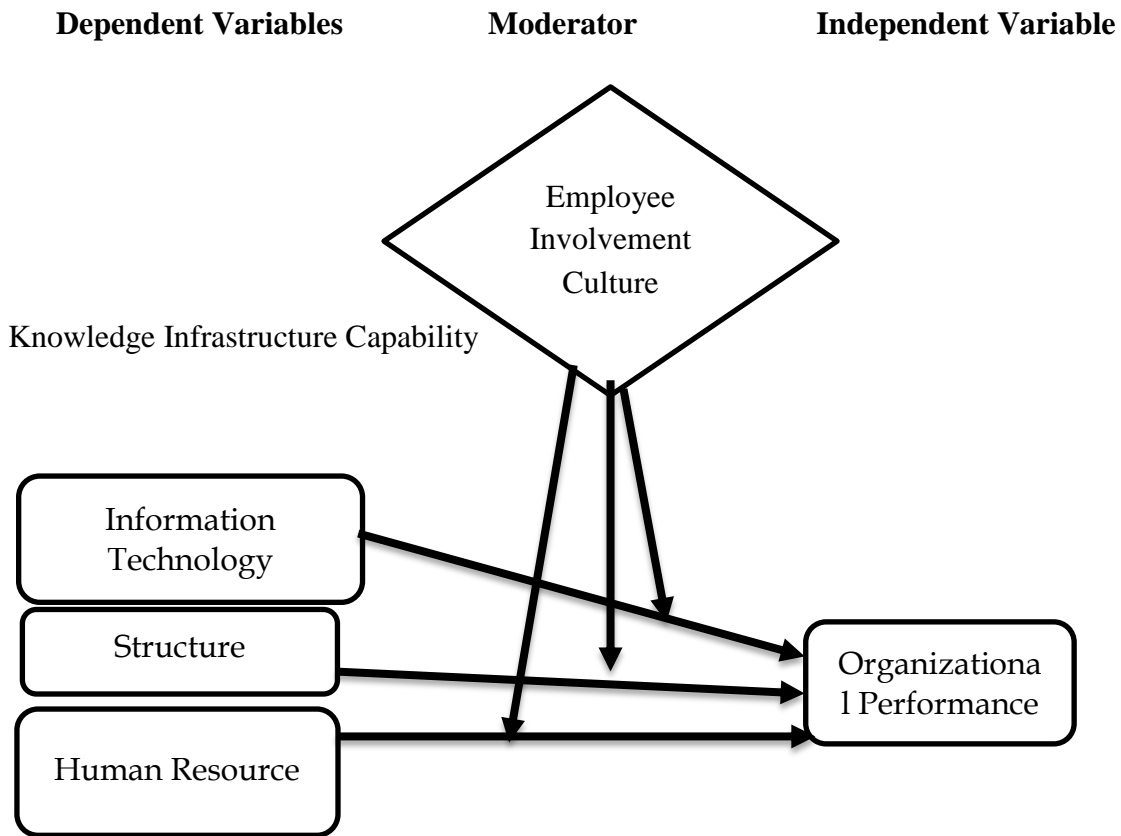
In the contemporary knowledge-based economy, operations within the pension subsector have become increasingly complex due to growing dependence on knowledge infrastructure capability, which facilitates effective knowledge management practices among Pension Fund Administrators (PFAs). As such, the availability of efficient and effective knowledge infrastructure capability has become a prerequisite for successful organizational operations in the subsector (Ali, et al, 2021).

Against this backdrop, the conceptual model of the present study draws on the Knowledge-Based View to explain the influence of knowledge infrastructure capability on organizational performance, while incorporating employee involvement culture as a moderating variable. KBV contends that the transfer and transformation of organizational knowledge require the synergistic interaction of key elements of knowledge infrastructure capability, namely

information technology infrastructure, organizational structure, and human resources.

Furthermore, knowledge infrastructure capability is closely linked to organizational performance, as information technology infrastructure, organizational structure, and human resources collectively support the organization's stock of knowledge, which can be leveraged to improve performance

outcomes. This implies that organizations can deploy knowledge resources to develop superior services and processes that enhance overall organizational performance (Grant, 1996). Accordingly, the study assumes that the Knowledge-Based View provides a robust theoretical foundation for examining how knowledge infrastructure capability, strengthened through employee involvement culture as a moderator, influences organizational performance.



**Figure 1.1:** Conceptual model of the study

### 3.0 Conclusion

Previous studies suggest that knowledge infrastructure capability and employee

involvement culture may influence organizational performance either positively or negatively, depending on the

specific dimensions of knowledge infrastructure capability examined. Organizational performance remains the foundation of every organization, as it underpins the attainment of strategic goals and objectives. To a considerable extent, organizational success also depends on the active involvement of employees in organizational activities. Against this backdrop, the present study seeks to contribute to the theoretical development of knowledge infrastructure capability, employee involvement culture, and organizational performance.

Specifically, the study proposes an empirical examination of the relationships among knowledge infrastructure capability, employee involvement culture, and organizational performance within the Nigerian pension industry. It investigates the direct effect of knowledge infrastructure capability on organizational performance, as well as the moderating role of employee involvement culture in this relationship. By doing so, the study addresses an important gap in the literature by providing empirical evidence

on the interaction between knowledge infrastructure capability and employee involvement culture in influencing organizational performance within the pension subsector in Nigeria.

Practically, the findings of this study are expected to provide a valuable foundation for improving the effectiveness and efficiency of operations in the pension subsector, particularly among Pension Fund Administrators (PFAs) in Nigeria. The proposed model offers guidance to key stakeholders by identifying the dimensions of knowledge infrastructure capability that enhance organizational performance and highlighting the role of employee involvement culture in strengthening these effects. Accordingly, the study underscores the need for empirical investigation of the moderating role of employee involvement culture on the relationship between information technology infrastructure, organizational structure, human resources, and organizational performance within the pension subsector

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## ASSESSMENT OF THE CONTRIBUTION OF LEGISLATIVE OVERSIGHT TO PUBLIC BUDGET CREDIBILITY IN NIGERIA

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### **Abstract**

*Effective oversight function of budget by the Legislative arm of government is a sine qua non to the success of a nation's budget. Indeed, it is a constitutional requirement in every democratic setting. The conduct of oversight functions is one of the most effective techniques that the Legislatures all over the world have adopted to influence the executive branch of government. The National Assembly has been doing this since the commencement of civil rule in 1999. However, the experience has not been very encouraging, and the hope of getting the budget better implemented through adequate oversight and supervision by the relevant committees is not in sight. The study assessed the contribution of Legislative oversight to public budget credibility in Nigeria for the period 1999 to 2025. Self-administered questionnaire method of data collection was employed to collect data from a sample of 124 Committee Clerks in the National Assembly of Nigeria. The study employed multiple linear regression analysis with the aid of SPSS version 20 to analyze the data. Major findings of the study revealed that the National Assembly do not adequately oversight budget implementation in Nigeria at 5% level of significance. Also, the study revealed that legislative oversight by the national Assembly of Nigeria has positive but insignificant effect on budget implementation in Nigeria. The study concludes that the Legislature in Nigeria do not adequately and effectively carryout its legislative function. This is connected with the inadequate funding of the legislative committees, inadequate skilled and specialized personnel for effective oversight as well as lack of consideration of Public Account Committee's report by the plenary session. Therefore, the study recommends that the report of Public Account Committees should be regularly considered by the plenary session in the National Assembly and punitive action be taking against defaulters. Similarly, the various committees in the National Assembly should be provided with adequate resources needed for effective oversight function to ensure budget credibility in the Nigeria.*

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**Keywords:** Legislative Oversight, Credible Budget

## **1. Introduction**

Budget is a central policy document of government, showing how it prioritizes and achieves its annual and multi-annual objectives. Apart from financing new and existing programmes, the budget is the primary instrument for implementing fiscal policy, thereby influencing the economy as a whole. Alongside other instruments of government policy, the budget aims to translate plans and aspirations into reality. Public sector budgeting provides the most rational, legal, and acceptable basis for resource mobilization and allocation to national strategic priorities in order to achieve macroeconomic objectives. Budget therefore serves as an economic tool for facilitating and realizing the vision of government within a given fiscal year.

A well-formulated and properly implemented budget has the capacity to promote socio-economic well-being, finance development projects, and support effective public service administration. This is particularly critical in developing economies such as Nigeria, where poverty remains pervasive despite the country's substantial natural resource endowment. Evidence indicates that Nigeria ranks among the countries with the largest concentration of the world's poor, accounting for a significant share of global poverty (Bello & Sagagi, 2017; World Bank, 2014). Consequently, ineffective budgeting and weak fiscal governance undermine the capacity of the government to address socio-economic challenges and improve living standards.

Moreover, the budget serves as a contract between citizens and the state, outlining how public resources are generated and allocated for the provision of public services. As such, the budget must be clear, transparent, and credible to command public trust and serve as a basis for accountability. Government is therefore responsible and accountable for the allocation, custody, and utilization of public resources through the budget, in accordance with established rules, policies, and financial regulations (Kamau, Rotich, & Anyango, 2017).

A credible budget serves as one of the primary frameworks for the implementation of economic and other developmental policies of any government. Therefore, it is important to understand how government ministries budget and whether the underlying system and processes are capable of producing a credible budget. However, independent reports by International Institutions providing budgetary support to governments have identified weak budget credibility as a problem besetting Public Financial Management (PFM). As a result, the government budget does not constitute a dependable framework for the allocation and efficient use of nation's resources. According to Conteh (2016) lack of budget credibility implies that government does not have a reliable framework for executing long-term developmental plan.

Nigeria has embraced budgeting as her main development instrument and has

approached the attainment of the nation's socio-political and economic transformation from the perspective of budgeting, among others (Ben-Caleb, 2015). In Nigeria, the Federal Government has a constitutional obligation to develop budget every fiscal year. The national budget is the most important economic policy instrument for the government and it reflects government's priorities regarding social and economic policy more than any other document. In addition, the instrument translates policies, campaign promises, political commitments, and goals into decisions regarding where funds should be spent and how funds should be collected. A well-functioning budget system is vital for the formulation of sustainable fiscal policy and the facilitation of economic growth (Ogujiuba & Ehigiamusoe, 2014).

Similarly, effective oversight function of budget by the legislative arm of government is a sine qua non to the success of a nation's budget. Indeed, it is a constitutional requirement in every democratic setting (Abiola & Mustapha, 2015). The conduct of oversight functions is one of the most effective techniques that the legislatures all over the world have adopted to influence the executive branch of government. The National Assembly has been doing this since the commencement of civil rule in 1999. However, the experience has not been very encouraging, and the hope of getting the budget better implemented through adequate oversight and supervision by the

relevant committees is not in sight. The National Assembly of Nigeria lacks capacity for effective oversight. As at today, the infrastructure and human resources to carry out effective oversight are not available (Abiola & Mustapha, 2015). Against this background, the current study seeks to examine the contribution of Legislature to public budget credibility in Nigeria from 1999 to 2025.

## **1.2 Problem Statement**

Globally, efforts have been going on to reinforce and reform government budget as a potent tool to performance evaluation and financial control (Oladele & Olaoye, 2016). However, the crucial issues confronting government is how to adequately control budgetary expenditure in order to have a sustained balance or surplus budget that will enhance economic development (Orebiyi & Ugochukwu, 2005).

Since the return to civil rule in 1999 in Nigeria, there have been disagreements between the legislative arm of government and the presidency over the budget performance. The Federal Government has always insisted that it is committed to the proper implementation of the annual budget, whereas the National Assembly has insisted that the Federal Government does not always implement the annual budget as it has been enacted. According to Osigwe and Nghargbu (2020) Nigeria's poor rating of 17 out of 100 in the 2017 global Open Budget Index, indicating low budget

transparency and openness; while countries such as Ghana, Brazil and South Africa scored 50, 77 and 89, respectively. When this fact is juxtaposed against the background that the recurrent part of the budget has been consuming about 70% of the budget, then the implication is that Nigeria has been dedicating about 15% of the overall annual budget to capital expenditure (Ehigiamusoe & Umar, 2013). This has led to poor social indicators, infrastructural deficit, poverty, massive unemployment and underdevelopment. As a result, Nigeria's budgetary process in the last three decades was always distorted by budget indiscipline as manifested in the forms of unsustainable extra budgetary expenditure, unfavourable budget variances and lack of budget integrity all of which translate into weak methods of delivering public good to citizens among others (Ben-Caleb, 2015).

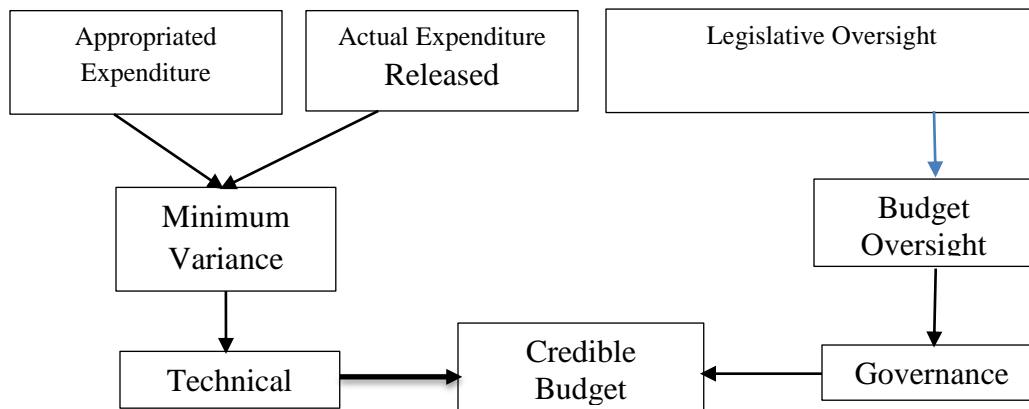
## **2. Literature Review**

### **2.1 Concept of Credible Budget and Legislative Oversight**

A credible budget is a budget that has minimal variances in comparison to the actual outcomes, comprehensive in coverage, and affordable regarding the availability of funding. Credible budget is made up of realistic estimates, sustainable expenditure programs, and the legislature

provides efficient oversight of the process (Deng & Peng, 2011). It serves as one of the primary frameworks for the implementation of the economic and other developmental policies of any government. A credible budget is a budget that fulfils the three budgetary objectives of fiscal discipline, allocative efficiency, and operational efficiency. For a budget to be credible also means that the budget system functions to serve spending control, management, and planning (Conteh, 2016). Budget credibility crucially depends on having predictable rules and processes in place for the formulation and implementation of the budget, including dealing with changing circumstances. As a whole, budget credibility goes beyond ensuring that numbers contained in the budget are correct and based on a realistic macro-economic foundation. It involves wider ownership of the budget priorities, predictable budget rules, and processes and systems that ensure discipline in implementation (Conteh, 2016). Budget credibility is critical for the attainment of greater efficiency and effectiveness in government operations (Helpap, 2015). Budget credibility crucially depends on having predictable rules and processes in place for the formulation and implementation of budget, including dealing with changing circumstances.

**Figure 2.1: Credible Budget**



Source: The Authors (2025)

Credible budget can be looked at from two different but related perspective, that is technical and governance. From technical perspective, a credible budget is achieved when there is minimum variation between actual and proposed expenditure. Government budgetary estimates, especially expenditures can vary significantly from their actual amounts. Such variances may be due to factors such as; estimation errors, unanticipated changes in economic conditions, or policy changes. From the governance perspective, a credible budget is achieved when a budget was adequately oversighted by the Legislature as shown in figure 2.1. Governance credibility also demands a clear and effective mechanism for political oversight including oversight by the legislature.

On the other hand, Legislative oversight refers to the review, monitoring, and supervision of the executive arm of government, including the numerous Federal Ministries, Departments and Agencies (MDAs)’s programs, activities,

and policy implementation by the Legislature. The Legislature exercises this power largely through its legislative committee system. In Nigeria, Legislative oversight authority derives from its “implied” powers in the Constitution, and House and Senate rules. It is an integral part of the Nigerian system of checks and balances. Oversight as an outgrowth of this principle serves a number of overlapping objectives and purposes such as; improvement in the efficiency, economy, and effectiveness of governmental operations; evaluation of programs and performance; detection and prevention of poor administration, waste, abuse, arbitrary and capricious behaviour, or illegal and unconstitutional conduct among others (Ehigiamusoe & Umar, 2013).

## 2.2 Empirical Review

In this section, the study empirically reviewed the works of other researchers related to the budget credibility and Legislative oversight. Sandra, Mohammed, and Nkweakwu (2020) examined Legislative oversight and the

enforcement of budget implementation in Nigeria Army. Using multiple linear regression analysis, the study revealed that, the Legislative oversight committee reports on the implementation of annual budget in the Nigerian Army have not been always release to Budget Office of the Federation and even to the Nigerian Army itself. However, Legislative oversight has been effective in addressing the revenue shortfall in budget implementation in the Nigerian Army.

Eguavoen, Ukarin, and Oghenebrozie (2022) examined the role of Legislators and budget process in Nigeria using content analysis. The study revealed that Legislative oversight committees have found not to be very effective in stimulating Ministries, Departments and Agencies (MDAs) for budget outcomes attainment. Udoji, Johnpaul, and Jude (2020) examined Legislative-Judicial relations and budget implementation in Nigeria using content analysis. The study revealed that the legislature and the judiciary, as institutions, do not perform their functions and duties in regulating the excesses of the executive branch of the government and its MDAs, in particular with respect to the complete execution of the budget enacted into law in Nigeria.

Moreover, Shehu, I. (2023) assessed the contribution of financial control institutions to budget credibility in the Nigeria public sector using both primary and secondary data. The study employed multiple linear regression analysis and established that there is positive but insignificant relationship between the

legislative oversight and budget credibility at 5% level of significance in the Nigeria public sector. Nokwazi (2022) examined the politics of budget decision-making in South Africa using in-depth elite interviews, non-participant observation, and document analysis. The study found that the enactment of budget legislation and reforms to improve the legislative budget process, their impact on balancing institutional power in decision-making, minimising undue influence on public resources and promoting “rational” budgeting is limited. James (2020) examined the executive–legislature relationship in the budget process of the 7th and 8th Nigeria’s National Assembly. The utilized primary data and established that Executive-Legislature relationship in the budget process between the 7th and 8th Assembly was frosty; while was Executive interference in the budget process of the Legislature. The study further revealed that the effect of the pattern of Executive-Legislature relationship in the budget process in both Assemblies had effect on governance that resulted to the delay in budget submission, approvals and poor implementation, poor infrastructural development, and low level of employment of the citizens. Rawabdeh and Abuhummour (2024) examined the role of parliamentary scrutiny in budgetary policy by focusing on the eighteenth Parliament of Jordan. Using quantitative data, the study found orrelation between budgetary scrutiny and transparency.

Similarly, Mbete (2016) examined oversight and accountability by the fourth Parliament of the Republic of South Africa the study utilized quantitative data and established that the oversight and accountability mechanisms employed by the fourth Parliament were ineffective and that members of Parliament did not understand their role, function and mandate in overseeing the executive and thus fails in holding the executive accountable for its actions and/ or lack of action. Abdullah et al. (2020) examined Parliament oversight on Local Government financial management in Pidie District, Aceh Indonesia using a sample of 31 members of the council involved in the oversight of local finances. Using multiple linear regression, the study established that political background had an effect on local financial oversight, while the regulation understanding had no effect. The study further revealed that public transparency moderates the relationship between political background and local financial oversight. Gcabashe and Pillay (2025) examined promoting financial management in local municipalities through accountability in South Africa for the secondary data for the period 2019 to 2020. The study employed thematic analysis and established that accountability measures in the Senqu Local Municipality are enabled by planning, oversight from legislative and administrative authorities, effective internal controls and an effective political and administrative interface.

### **2.3 Theoretical Framework**

The study anchored on the theory of separation of powers as used by Collins (1999) and Mahmud, Ogwuzebe, and John (2022). The theory was propounded by Baron Charles de Montesquieu (1689-1755). According to him Montesquieu before the 17th century, man by his very nature has the innate tendency to keep on accumulating power, and if allowed to gain absolute and exclusive control of political power, he is very likely going to use this absolute hold on power to tyrannize his fellow man. Montesquieu, therefore, concluded by advising in his epic work, *The Spirit of the Laws* (1748), that in order to check against possible authoritarian, dictatorial or tyrannical use of power, governmental power should be shared among the various bodies into which the government system is be divided. In specific terms, Montesquieu actually developed his rationalization into a full-blown doctrine known as separation of governmental powers into legislative (law - making), executive (law-executing) and judicial (law-- interpreting) powers; emphasizing that each of these powers be confined or assigned to each of the three arms of government into which the government business is divided, that is, Legislature, Executive and the Judiciary. It is worthy to note here that by the late 17th century, the idea of separation of powers was revived following the claims to the divine rights of kings and absolute sovereignty.

Since then, the doctrine of separation of powers passed across to the United States

of America's constitution, though in a modified form. In the bid to reap the advantages of the doctrine of separation of powers and at the same time check against possible abuse of power conferred on it by one arm of government, the framers of the American constitution retained the idea of dividing governmental powers along the line proposed by Montesquieu (executive, legislature and judiciary). The constitution also went further to provide that these three powers should not be restricted to separate water tight departments as advocated by Montesquieu, but should ingeniously be made to fuse into one another, hence the Theory of Fusion of Powers. The idea behind the doctrine of fusion of powers is to provide for a system whereby in the process of relating with one another, each arm of government acts as a check against any possible abuse of the power assigned to any of its counterpart in the governmental system. Today in the United States and in most developed democracies the idea of fusion of powers or separation of powers has gained in popularity in form of a system based on the doctrine of checks and balances, which serves well to check any possible excesses on the part of any of the three organs of government (Collins, 1999). As a cardinal pillar of modern democracy, separation provides a mechanism for checks and balances among governmental organs; and has been demonstrably practiced in the advanced democracies of the United State of America and Great Britain.

The forgoing is exactly the rationale for the relationship existing between the executive and the legislature in the budgetary process. When exercised alongside the doctrine of Rule of Law, separation can be relevant and considerably useful in gaining insights into role assignment and performance expectations with respect to the budgetary process (authorization and powers) (Mahmud, 2022). The theory of separation of power is applicable to Nigeria because preparation of budget is a shared responsibility of the Executive and Legislative arm of government. The budget, which is officially referred to as the Appropriation Act, is prepared by the Executive, approved by the Legislature and signed into law by the President.

### **3. Method**

#### **3.1 Population of the Study**

The population for the study is consists of committee clerks in the National Assembly both Senate and House of Representatives. Table 3.1 shows that the 10<sup>th</sup> National Assembly has a total number of 182 Standng Committeess; with 71 committees in the Senate (Office of the Director of Committees, Senate 2022) and 111 in House of Representatives (Office of the Director of Committees, House of Representative, 2022). Committee clerks were used because they are more experienced and more professionals on budget oversight than the politically elected members.

**Table 3.1: Population of the Study**

Category of the Population		Number of Population	Percentage of Population
National Assembly	Senate Standing Committees	71	39.0
	House of Representatives Standing Committees	111	61.0
	Total	182	100.0

Sources: Office of Director of Committees, Senate (2025) and Office of the Director of Committees, House of Representatives (2025)

### 3.2 Sampling and Sampling Technique

To determine appropriate sample size, the study employed Krejcie and Morgan (1970) method of sample size determination. Therefore, the appropriate sample size for the study is 124 as shown in table 3.2.

**Table 3.2: Sample Distribution**

Category of the Sample		Sample Size	Percentage of Sample
National Assembly	Senate Standing Committees	48	39.0
	House of Representatives Standing Committees	76	61.0
	Total	124	100.0

Source: Author's Computation (2025)

Finally, to easily access the respondents, convenient or accidental sampling technique was adopted. This method of sampling was chosen because it allows the researcher to select any respondent that is conveniently available to him.

### 3.3 Instruments of Data Collection

The study utilized quantitative data collected using the instrument of questionnaire. As such, a total number of 124 questionnaires were administered to the various committee clerks in the National Assembly; 48 questionnaires in

Senate and 76 questionnaires in House of Representatives. The questionnaire was classified into three main sections. Section A contained questions related to the demographic characteristics of the committee clerks, section B contained questions related to the credible budget, and section C contained questions related to Legislative oversight.

### 3.4 Reliability of the Instrument

Reliability test was conducted to measure the internal consistency of the instruments. Hence, Cronbach's alpha is

one way of measuring the strength of that consistency. The coefficient of the Cronbach's alpha was calculated using the formula specified in equation 3.1.

$$\alpha = \frac{NC}{V + (N-1)C}$$

(3.1)

Where N represents number of items,  $\underline{C}$  represents average inter-item covariance, and  $\underline{V}$  represents average variance.

The resulting  $\alpha$  coefficient of reliability ranges from 0 to 1 in providing this overall assessment of a measure's reliability. If all of the scale items are entirely independent from one another (that is, they are not correlated or share no covariance), then  $\alpha = 0$ ; and, if all of the items have high covariances, then  $\alpha$  will approach 1 as the number of items in the scale approaches infinity. George and Mallery (2003) provides the following rules of thumb for Cronbach's Alpha values; if  $\alpha \geq 0.9$ , excellent, if  $\alpha \geq 0.8$ , good, if  $\alpha \geq 0.7$ , acceptable, if  $\alpha \geq 0.6$ , questionable, if  $\alpha \geq 0.5$  poor, and if  $\alpha < 0.5$ , unacceptable. Although the standards for what makes a good  $\alpha$  coefficient are entirely arbitrary and depend on our theoretical knowledge of the scale in question, the study used  $\alpha \geq 0.7$  threshold as considered acceptable in most social science researches.

### 3.5 Method of Data Analysis

To examine the adequacy of budget oversight by the legislature in ensuring budget credibility in the Nigeria public sector, Multiple Linear Regression was employed as specified in equation 3.2:

$$BC = \alpha_0 + \beta_1 ALO + \beta_2 ELO + \mu$$

(3.2)

Where BC represents Budget Credibility, ALO represents Adequate Legislative Oversight, ELO represents the Effective Legislative Oversight,  $\alpha_0$  represents constant or intercept,  $\beta_1$  and  $\beta_2$  represents slope coefficients, and  $\mu$  represents error term.

## 4. Result And Discussion

This section contained analysis and discussion of the results. The paper employed multiple linear regression model to analyze quantitative data with the aid of Statistical Package for Social Science (SPSS) version 22 while content analysis was employed to analyze the qualitative data.

### 4.1 Reliability Test Result

To ensure the internal consistency of the instrument, the paper employed reliability test using Cronbach's Alpha approach. Cronbach's Alpha measure the internal consistency between items to decide whether the different items in a questionnaire consistently reflect the construct that it measures. The result in

table 4.1 indicated Cronbach's Alpha values of 0.792 and 0.787 for both Adequate Legislative Oversight and Effectiveness of Legislative Oversight the

result revealed an acceptable Cronbach's alpha values which ensures the internal consistency of the instrument.

**Table 4.1 Reliability Test**

<b>Scale</b>	<b>No of Items</b>	<b>Cronbach Alpha</b>
Adequate Legislative oversight	3	0.792
Effectiveness of Legislative oversight	3	0.787

*Source: Author's computation (2025)*

The result of multiple linear regression in table 4.2 shows that Legislative Oversight (ALO) is positive but insignificant to ensure Budget Credibility (BC) in the Nigeria at 5% level of significance. A percentage increase in Legislative oversight caused budget credibility to increase by about 0.23%. This implies that budget oversight by the Legislature is inadequate to ensure budget credibility in Nigeria. This finding is consistent with Udoji, Johnpaul, and Jude (2020) who found that Legislature and the Judiciary, as institutions, do not perform their functions and duties in regulating the excesses of the executive branch of the government and its MDAs, in particular with respect to the complete execution of

the budget enacted into law in Nigeria. Similarly, the result in table 4.2 shows that legislative oversight has no significant effect on budget credibility in Nigeria at 5% level of significance. A percentage increase in legislative oversight caused budget credibility to increase by about 0.31%. This implies that legislative is not effective to ensure budget credibility in Nigeria. This finding is consistent with Eguavoen, Ukarin, and Oghenebrozie (2022) who reported that Legislative oversight committees have found not to be very effective in stimulating Ministries, Departments and Agencies (MDAs) for budget outcomes attainment.

**Table 4.2: Coefficients**

Dependent Variable: Budget Credibility (BC)					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Prob.
	B	Std. Error	Beta		
Constant	-0.029	0.152		-0.107	0.851
ALO	0.239	0.162	0.172	1.475	0.108
ELO	0.317	0.166	0.722	1.909	0.066
R <sup>2</sup>	0.668				
F-Stat (Prob.)	41.222 (0.000)				
DW	1.991				

Source: Author's Computation (2022)

Note: ALO represents Adequate Legislative Oversight. ELO represents Effective Legislative Oversight

To ensure the robustness of the result, several diagnostic tests were conducted as shown in table 4.2. The result shows that, the coefficient of R<sup>2</sup> value is 0.668 which implies that Adequate Legislative Oversight (ALO) and Effectiveness of Legislative Oversight (ELO) accounted for about 66.8% of variation in Budget Credibility (BC) in Nigeria while the remaining 33.2% was captured by the residual. The overall model fitness shows that the probability value of F-stat is less than 5% ( $P < 0.05$ ) which implies that the model fits the data. The coefficient of Durbin Watson statistics (DW) is

approximately 2; which implies that there is no sign of autocorrelation in the result.

Furthermore, to check whether the explanatory variables are independent, multicollinearity test was conducted as shown in table 4.3. The result shows that none of the coefficients of Variance Inflation Factor (VIF) is greater than 10 and none of the coefficients of Tolerance is less than 0.1. This implies that the model has no problem of multicollinearity and that the explanatory variables are independent.

**Table 4.3: Multicollinearity Test**

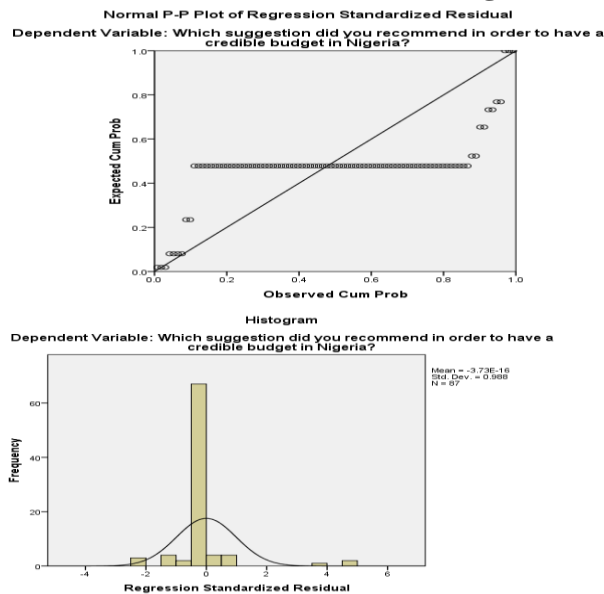
Variables	Tolerance	VIF
Adequate Legislative Oversight	0.775	1.291
Effectiveness of Legislative Oversight	0.775	1.291

Source: Author's Computation (2022)

Similarly, the paper checked the assumption of normality of the residuals using histogram and normal probability plot as shown in figure 4.1. The figure to the right shows that the points are the observed residuals, while the straight line represents the normal distribution. If all the dots fall on the straight line, it implies

that the residuals are perfectly normally distributed. In this regard, the plot seems to be close to normal, as no points extremely deviate from the straight line. This implies that the residuals of the model are normally distributed as shown in the figure to the right.

**Figure 4.1: Normality Test**

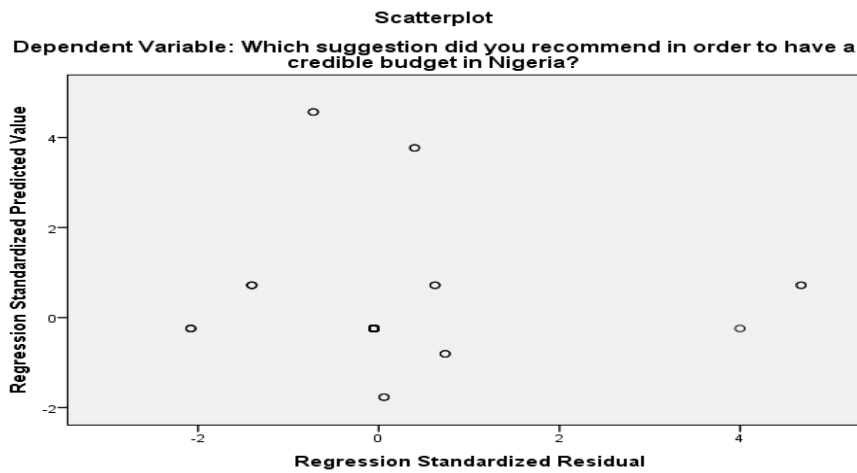


*Source: Author's Computation (2025)*

The paper also conducted heteroskedasticity test to check whether the residuals of the model has constant variance. Hence, scatter plot of standardized residuals against standardized predicted values was estimated as shown in in figure 4.2. The figure shows a random array of dots that are evenly dispersed around zero. If the graph funnels out, there are chances that

there is heteroscedasticity in the sample. Also, if the graph plots any sort of curve, there are chances that the data have broken the assumption of linearity. The figure shows a random dispersion around zero which implies that the model has no problem of heteroscedasticity and the residuals of the model has constant variance.

**Figure 5.3: Heteroscedasticity Test**



Source: Author's Computation (2022)

## 5. Conclusion

The study examined the contribution of Legislative oversight to public budget credibility in Nigeria. The key conclusion that can be drawn is that the Legislature in Nigeria do not adequately and effectively carryout its legislative function. This is connected with the inadequate funding of the legislative committees, inadequate skilled and specialized personnel for effective oversight as well as lack of consideration of Public Account Committee's report by the plenary session.

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## 6. Implications/Recommendations

Based on the above conclusion, the study recommends that the report of Public Account Committees should be regularly considered by the plenary and punitive action be taking against defaulters. Similarly, various committees in the National Assembly should be provided with adequate resources needed for effective oversight function which include; adequate funding, staff training and retraining, staff welfare, among others. Finally, the Nigerian legislature should adopt the use technology like i-monitor for effective legislative oversight to ensure budget credibility in the Nigeria public sector.

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## ENVIRONMENTAL DETERMINANTS OF ENTREPRENEURSHIP IN NIGERIA- A LITERATURE SURVEY

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### **Abstract**

*This study is a purely Literature survey, employing thematic analysis of factors of entrepreneurship in Nigeria. It provides an in-depth exploration of the environmental constraints that hinder the development of entrepreneurship, critically examining literature on the fundamental challenges entrepreneurs face, including poor infrastructure, inadequate access to funding opportunities, unstable power supply, and inconsistent government policies in the Nigerian setting. The findings reveal how these challenges contribute to high business failure rates, restrict long-term sustainability, and perpetuate economic underdevelopment. To address these challenges, the paper proposes actionable solutions such as the deliberate improvement of infrastructure, the creation of supportive and consistent government policies, enhanced financial inclusion, and the establishment of frameworks that encourage innovation and risk-taking. The predominant objective is to provide a clearer understanding of how these obstacles can be dismantled in order to foster a more enabling environment for entrepreneurship and, by extension, sustainable economic development in Nigeria.*

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**Keywords:** Entrepreneurship, Nigeria, Constraints, Infrastructure, Development and Environmental Determinants.

### **1.0 Introduction**

Entrepreneurship is widely acknowledged as a cornerstone of sustainable economic development and a key driver of innovation, wealth creation, and poverty reduction. In both developed and developing nations, entrepreneurship serves as a catalyst for job creation, increased productivity, and the diversification of national economies (Acs

& Szerb, 2010). Particularly in a developing country like Nigeria, which is grappling with high unemployment, underemployment, poverty, and a high dependency ratio, entrepreneurship has the potential to unlock new opportunities for inclusive growth. With a growing population exceeding 200 million, a large pool of vibrant and talented youth, rich natural resources, and a growing informal

economy, Nigeria possesses the necessary ingredients for a thriving entrepreneurial ecosystem (Baraku, 2025).

However, the promise of entrepreneurship in Nigeria has been undermined by a myriad of environmental constraints. These constraints both internal and external constitute significant barriers to entrepreneurial activity and include infrastructural deficiencies, inadequate power supply, poor transportation networks, insecurity, unstable macroeconomic policies, lack of access to capital, corruption, and bureaucratic red tape (Ogunlana & Olanrewaju, 2020). Moreover, despite numerous government interventions such as the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), the Bank of Industry (BOI), and various youth empowerment schemes, the success rate of small and medium enterprises (SMEs) remains worryingly low. Many start-ups struggle to survive beyond their first five years, with a significant number folding due to an unsupportive and unpredictable business environment (Olawale & Garwe, 2010).

The socio-political environment in Nigeria has also played a role in compounding these problems. Issues such as insurgency, kidnapping, ethnic tensions, and widespread insecurity in various regions have made many areas unsafe for business operations. These factors not only deter local entrepreneurs from expanding their ventures but also discourage foreign investors from entering

the market. Additionally, erratic government policies, lack of policy continuity, and insufficient implementation mechanisms further complicate the entrepreneurial landscape (Eneh, 2010). Financial institutions often consider SMEs high-risk borrowers, which restricts their access to credit and essential financial services (Olorunsola & Nwankwo, 2023). For young entrepreneurs, especially in rural and marginalized communities, these challenges are even more pronounced due to inadequate education, poor digital literacy, and lack of mentorship or professional networks (Taleat et al., 2025).

This complex web of environmental challenges has made it difficult for entrepreneurship to flourish in Nigeria, raising concerns about the country's economic future and its ability to achieve the goals of sustainable development (Audu, 2017; Adeola & Jegede, 2017). While several studies have explored aspects of entrepreneurship in Nigeria, there remains a need to critically examine how the broader environment continues to inhibit its development and to identify practical and strategic solutions that can reverse this trend.

Despite the strategic importance of entrepreneurship to national development, Nigeria continues to struggle with creating a sustainable environment that supports the growth of small and medium-scale enterprises (SMEs). According to Olutunla (2001), SMEs play a vital role in

promoting economic development by providing employment opportunities and contributing significantly to industrial output, yet their potential is often underutilized due to environmental barriers. Similarly, Ogujiuba (2004) emphasizes that SMEs serve as a backbone for economic diversification in developing nations but are frequently hindered by structural deficiencies and policy inconsistencies. Entrepreneurs often encounter systemic challenges that impede business establishment and expansion. These include poor infrastructure, limited government support, insecurity, corruption, and restrictive regulatory frameworks. These environmental constraints not only limit business success but also deter potential entrepreneurs, thereby weakening the country's economic resilience and reducing opportunities for job creation (Adebayo & Oviawe, 2016). The inability to overcome these constraints raises critical questions about the effectiveness of current policies and the future of entrepreneurship in Nigeria. Hence, the need to revisit these issues, for a practical solution.

The reviewed literature reveals that environmental constraints are widely acknowledged as critical challenges to entrepreneurship in Nigeria. According to Ihugba, et al, (2013), issues such as inadequate infrastructure, corruption, and poor institutional support remain significant barriers. However, existing studies often treat these constraints in isolation. For example, Sulaimon and

Olayiwola (2016) examined government policy inconsistency and electricity supply without linking them to other constraints, while (Adeola & Jegede 2017) focused mainly on financial and environmental factors. Other scholars, such as Ikuemonisan (2024), have analyzed these challenges but without fully contextualizing their cumulative impact. Additionally, studies are divided Gumel (2019) argues that government policies and technology interventions are already reducing entrepreneurial difficulties, whereas Ihugba et al. (2013) maintain that poor implementation and bureaucratic inefficiency continue to worsen the situation.

This scholarly divide leaves a clear knowledge gap. There is limited research that simultaneously evaluates environmental barriers, their specific impacts on SMEs, the effectiveness of current interventions, and sustainable recommendations under a unified theoretical lens. This Paper addresses that void by offering an integrated and critical analysis, backed by recent evidence, to propose a comprehensive path forward for entrepreneurship in Nigeria.

By reviewing existing knowledge and expert opinions on these issues, this study aims to bridge the gap between theory and practical solutions, ultimately recommending strategic interventions that could foster a more enabling environment for entrepreneurship in Nigeria.

Therefore, the objectives of this paper are as follows:

1. To identify the key environmental constraints inhibiting entrepreneurial development in Nigeria.
2. To examine the impact of these constraints on small and medium-scale enterprises.
3. To analyze existing policies and interventions aimed at promoting entrepreneurship in Nigeria.
4. To propose strategic recommendations and the way forward for improving the entrepreneurial environment in Nigeria.

## **2.0 Literature Review**

This literature review provides a conceptual and empirical analysis of recent scholarly works on environmental constraints affecting entrepreneurship in Nigeria. It is structured around the study's four core objectives. A theoretical framework is also presented to guide understanding of the subject.

### **Environmental Constraints Affecting Entrepreneurship in Nigeria**

Entrepreneurship in Nigeria operates within a challenging macroeconomic environment. Scholars have identified infrastructural deficits, unreliable electricity supply, poor road networks, insecurity, and unstable government policies as major impediments to entrepreneurial growth (Okonkwo & Udo, 2023). Similarly, Adeboye and Ibrahim (2022) argue that the lack of access to

clean water, transport, and telecommunication services significantly reduces the competitiveness of local SMEs.

Ifeanyi and Bolanle (2024) provide evidence from southern Nigeria, showing how poor infrastructure discourages young entrepreneurs from setting up businesses in rural areas. Additionally, Bello and Hassan (2022) contend that political instability and regulatory inconsistencies are core barriers preventing foreign direct investment and indigenous entrepreneurial ventures. While some authors, like Lawal et al. (2023), believe digital innovation is slowly mitigating infrastructural barriers, others such as Onuorah and Nwosu (2022) insist that deeper structural reforms are required before technology can be transformative.

Environmental barriers affect not only the birth of new ventures but also their ability to scale and survive. Umeh and Adekunle (2023) observe that over 60% of Nigerian SMEs fail within their first five years, largely due to environmental challenges. According to Olayinka and Dogo (2024), limited access to finance and erratic power supply are primary reasons why micro and small businesses struggle with operational costs.

Ezenwa and Adamu (2022) conducted a study on SMEs in Abuja and reported that insecurity—especially in the northern belt—has forced many entrepreneurs to relocate or shut down operations. Conversely, Salami and Oke (2023)

suggest that digital entrepreneurs are more resilient to these barriers due to lower physical infrastructure requirements.

Each of the environmental factors is carefully discussed below.

#### **-Economic and Infrastructural Barriers**

Economic and infrastructural barriers remain some of the most persistent challenges to entrepreneurship in Nigeria. Egere (2024) observes that infrastructural decay, particularly poor electricity supply and unreliable transport systems, makes the cost of doing business prohibitively high and reduces the competitiveness of local firms. Similarly, Umar, et al, (2022) argue that inadequate road networks and weak information and communication technology (ICT) services hinder entrepreneurs from reaching wider markets. Abimbola, et al, (2011) further emphasize that infrastructural deficits are even more severe for rural entrepreneurs, especially those engaged in agribusiness, who face higher costs in transporting goods to urban centers. Audu (2017) adds that power shortages and inefficient telecommunication services force small enterprises to rely on costly alternatives, thereby reducing profit margins. Finally, Adeola and Jegede (2017) note that poor infrastructure is intertwined with broader economic instability, creating a hostile environment for entrepreneurial growth. Together, these scholars demonstrate that without strong infrastructure, entrepreneurship cannot thrive in Nigeria regardless of individual initiative.

#### **-Government Policies, Interventions and Regulatory Frameworks**

The role of government policies and regulatory frameworks in shaping entrepreneurship in Nigeria has been widely studied. Akinyemi (2018) argues that inconsistent government policies and frequent regulatory changes discourage long-term investments in small and medium-sized enterprises. Nwabuatu, et al, (2025) point out that bureaucratic red tape and unclear licensing procedures delay business registration and discourage informal operators from formalizing their enterprises.

Nigeria has introduced several entrepreneurship-supporting programs, such as N-Power, SMEDAN, and YouWin. However, the effectiveness of these initiatives remains under scrutiny. Adebisi and Nkanga (2023) examined the performance of SMEDAN and concluded that while the agency has trained many entrepreneurs, limited follow-up and funding challenges dilute its impact. Similarly, Musa and Abubakar (2022) criticize these programs as being urban-centric and politically driven rather than merit-based. In addition, Etuk and Kolawole (2023) argue that government interventions often lack stakeholder engagement and fail to address the specific needs of grassroots entrepreneurs. However, Amadi and Yusuf (2024) maintain that programs like the BOI Youth Entrepreneurship Support Scheme (YES-P) have shown promise in targeted skill acquisition.

Moreover, Akinyemi and Adejumo (2018) had earlier emphasized that although entrepreneurship support programmes exist, the lack of coordination among government agencies often leads to duplication and poor outcomes. According to Ihugba, et al, (2013), many entrepreneurship development schemes are undermined by corruption and inefficiency, meaning that intended benefits do not reach the target population. In addition, Umar et al. (2022) show that gaps in policy design and poor monitoring mechanisms result in interventions that are poorly tailored to the needs of entrepreneurs. Collectively, these a more authors indicate that Nigeria's regulatory and policy environment often stifles rather than promotes entrepreneurship.

Another major issue is the lack of consistency in government policies related to business registration, taxation, and regulatory compliance. Entrepreneurs often face bureaucratic bottlenecks that delay business approvals and create uncertainty in the business environment (Akinyemi, 2018; Nwabuatu et al., 2025). Literature also points to corruption within government agencies, where bribes and unofficial payments are sometimes required to move processes forward (Ihugba et al., 2013; Okafor, 2019; Achebe, 2010).

In all of these, one thing is clear: existing policies and government interventions have not yielded the expected results in entrepreneurship development in Nigeria.

### **-Access to Finance and Support Systems**

Access to finance is consistently identified as one of the greatest obstacles to entrepreneurial success in Nigeria. Watse (2017) observes that the inability of small business owners to provide collateral often prevents them from obtaining loans from commercial banks. Gumel (2019) adds that while government agencies such as the Bank of Industry have tried to provide funding, these schemes often reach only a small fraction of potential beneficiaries. Aina (2025) highlights the rise of digital finance and fintech platforms as an emerging solution, but notes that access remains uneven and limited mainly to urban entrepreneurs. According to Olowe, Moradeyo, and Babalola (2013), microfinance institutions, though designed to serve small businesses, often charge high interest rates that discourage uptake. Similarly, Adeoti (2012) points out that financial literacy gaps reduce entrepreneurs' ability to take advantage of available opportunities, making support systems ineffective. The consensus among these authors is that without accessible and affordable finance, even the most innovative entrepreneurs struggle to sustain or expand their businesses.

### **-Weak Entrepreneurial Education and Cultural Barriers**

There is also a gap in entrepreneurial education and mindset, especially among the youth. Many graduates lack the practical skills and exposure needed to start or sustain a business (Chukwuma-

Nwuba, 2018), even though entrepreneurship is a compulsory course taught in higher institutions of learning in Nigeria. Additionally, societal attitudes that favor white-collar jobs over entrepreneurship discourage innovation and risk-taking (Billy, 2019; Abimbola et al., 2011). Cultural expectations, particularly around gender roles, also limit the participation of women in entrepreneurial ventures (Okafor & Onuoha, 2016; WJARR, 2022).

#### **-Security Challenges and Corruption**

Security concerns and corruption constitute another significant barrier to entrepreneurship in Nigeria. Sanni (2023) notes that insecurity, including insurgency and armed banditry, raises the cost of doing business by discouraging investment and disrupting supply chains. In their study, Agbaeze, et al, (2023) show that frequent clashes in rural and semi-urban communities reduce the stability needed for small firms to grow. Corruption compounds these problems. Ihugba, et al, (2013) argue that bureaucratic rent-seeking by government officials creates an additional financial burden on entrepreneurs seeking access to public services or support funds. National reviews of corruption by Achebe (2010) also point to a culture of graft that permeates both public and private sectors, further discouraging innovation. Likewise, Okafor (2019) finds that entrepreneurs in Nigeria often have to pay unofficial fees to secure contracts or licenses, which increases the cost of starting and running businesses. As these

authors suggest, security and corruption are deeply intertwined, creating an unpredictable environment that discourages both local and foreign entrepreneurs.

#### **-Socio-Cultural Influences on Entrepreneurial Behaviours**

Socio-cultural factors also play a decisive role in shaping entrepreneurship in Nigeria. Chukwuma-Nwuba (2018) emphasizes that cultural values and community expectations influence entrepreneurial intentions and often determine whether individuals are willing to take risks. Abimbola, Agboola, and Adejumo (2011) note that societal stigma attached to business failure discourages innovation, since entrepreneurs fear reputational damage. Billy (2019) reports that gender norms and family expectations can either limit or encourage entrepreneurial activity, with women often facing more restrictive barriers. Similarly, Okafor and Onuoha (2016) show that religious beliefs and traditional practices can affect decisions on investment, partnership, and business ethics. WJARR (2022) study highlights that while community networks sometimes provide support and social capital, they can also restrict expansion if entrepreneurs are pressured to prioritize communal obligations over business growth. Together, these works reveal that socio-cultural influences interact with economic realities, shaping the choices, opportunities, and limitations experienced by Nigerian entrepreneurs.

While these findings offer valuable insights into environmental constraints faced by entrepreneurs in Nigeria, they fail to provide a strategic and integrated approach to dealing with the issues raised. Hence, this study.

### **Theoretical Framework: The Ecological Systems Theory of Entrepreneurship**

To ground this analysis, this Paper adopts the Ecological Systems Theory of Entrepreneurship proposed by Schoon and Duckworth (2012). This theory posits that entrepreneurship does not occur in a vacuum but is influenced by interrelated environmental layers—microsystem (individual skills), mesosystem (education, family support), exosystem (infrastructure, financial institutions), and macrosystem (culture, national policies). Applying this theory to Nigeria, the environmental constraints faced by entrepreneurs can be understood as systemic interactions between personal capability and the surrounding economic and institutional structures. This theoretical lens enables a holistic analysis of the barriers to entrepreneurship, offering a foundation for multidimensional policy interventions.

### **3.0 Methodology**

This is a literature survey based on documentary evidence. It is a content (thematic) analysis where literature on each subject is carefully analysed to ascertain the situation of each environmental factor of entrepreneurship in Nigeria. This method involves the

critical examination and interpretation of existing literature, published research, government reports, policy documents, journal articles, and other credible secondary sources related to entrepreneurship and environmental challenges in Nigeria.

Through this method, the study examines a broad range of factors such as: economic and infrastructural barriers; government policies and regulatory frameworks; security challenges and corruption; access to finance and support systems; and socio-cultural influences on entrepreneurial behaviours. The findings of the various works are analyzed in the following session.

### **4.0 Discussion**

Studies by Achebe (2010), Abimbola et al. (2011), Adeoti (2012), Ihugba et al. (2013), Olowe et al. (2013), Onuoha (2016), Audu (2017), Adeola and Jegede (2017), Watse (2017), Akinyemi (2018), Chukwuma-Nwuba (2018), Billy (2019), Gumel (2019), Okafor (2019), Umar et al. (2022), Agbaeze et al. (2023), Sanni (2023), Egere (2024), Aina (2025), and Nwabatu et al. (2025) consistently highlight and reveal a range of interrelated environmental constraints that continue to inhibit the growth and sustainability of entrepreneurship in Nigeria, thus showing the major challenges faced by Nigerian entrepreneurs.

One of the most prominent issues of entrepreneurship in Nigeria is the poor state of infrastructure, particularly in areas such as electricity, road networks, and internet connectivity. Studies reviewed

agree that irregular power supply significantly increases the cost of doing business, forcing many entrepreneurs to rely on alternative energy sources like generators, and solar panels which are expensive and sometimes unsustainable (Audu, 2017; Egere, 2024). Poor road conditions also hinder the transportation of goods and services, especially for entrepreneurs operating in rural areas (Abimbola et al., 2011; Adeola & Jegede, 2017; Umar et al., 2022). Government and private firms must wake up to their social responsibilities in this regard.

Limited access to affordable finance is another major barrier to entrepreneurship. Although several government schemes and microfinance institutions exist, the procedures for accessing these funds are often complex, and interest rates remain high (Watse, 2017; Olowe et al., 2013). Collateral requirements by commercial banks are beyond the reach of many small-scale business owners, especially youth and women entrepreneurs (Gumel, 2019; Aina, 2025; Adeoti, 2012). This calls for the attention of government, finance houses and private financial institutions in providing access to finance for entrepreneurs, especially start-ups.

The issue of insecurity was also emphasized in the literature. The rise in armed robbery, kidnapping, and insurgency in many parts of the country has discouraged investment and made it difficult for businesses to operate freely (Sanni, 2023; Agbaeze et al., 2023). This has led to the relocation or closure of

businesses in high-risk areas, further weakening entrepreneurial activity (Ihugba et al., 2013). Corruption in obtaining loans and support from government through its officials have created a bottleneck in entrepreneurship development (Okafor, 2009; Achebe, 2010; and Ihugba et al., 2013). Nigerian government must wake up to its responsibility in providing security so as not to lase its sovereign state. More so as the issue is not just affecting entrepreneurship, but attracting global attention negatively.

Whereas, literature reveal that support systems such as mentorship, incubation hubs, and business development services are either lacking or insufficient in most parts of the country. This makes it difficult for startups to survive beyond the early stages, as they lack the guidance and structure needed to grow and scale their businesses (Adeoti, 2012; Gumel, 2019; Aina, 2025; Olowe et al., 2013; Watse, 2017). Support programmer should be readily available and accessible to encourage entrepreneurs. Again, government should spearhead these. However, private organizations and well-meaning individuals can contribute to the success of these programs.

Nevertheless, recent literature proposed several strategies to address entrepreneurship barriers in Nigeria, there is no consensus on which strategies are most practical or scalable. Ojeifo and Ibukun (2022) advocate for public-private partnerships to fix infrastructure, whereas

Njoku and Olaniyan (2023) emphasize education reforms to promote entrepreneurship from secondary school level. Others, like Tunde and Ogbonna (2024), propose tax relief, credit guarantees, and regional SME hubs as more viable paths to entrepreneurial revitalization.

However, this paper offers integrated strategies as a way forward. This is because entrepreneurship development in Nigeria requires an aggressive approach, combining both grassroots development and institutional reforms in order to offer both short term solutions and long-term sustainability frameworks; and calling for the cooperation of government and all stakeholders of the Nigerian economy in proffering solutions to the issues of entrepreneurship in Nigeria.

## **5.0 Conclusion and Recommendations**

It is evident from the evaluation of the work of previous scholars, as shown above, that environmental constraints continue to cripple the growth of entrepreneurship in Nigeria, and unless these issues are addressed with urgency and sincerity, the dream of a thriving entrepreneurial ecosystem will remain distant. The objectives of this paper is to uncover the root causes of these constraints and to chart a path forward. Having reviewed the evidence and examined the realities, it is clear that Nigeria's entrepreneurial potential is not limited by a lack of ideas or ambition, but

by the hostile environment in which these ideas are forced to survive.

The time for theoretical discussions and half-hearted interventions is over. Nigeria must take decisive steps to remove the barriers strangling entrepreneurship. Infrastructure must be fixed not later, but now. Constant power supply, accessible roads, and reliable communication networks are not luxuries; they are necessities for business survival. Government must stop paying lip service to development and start delivering visible, tangible results.

Policy inconsistency and bureaucratic red tape must be addressed. Entrepreneurs deserve a system that supports them, not one that frustrates them. Clear, stable policies and digital processes should be adopted across all regulatory and business registration agencies to eliminate corruption and delays. Those responsible for frustrating entrepreneurs through outdated systems and corrupt practices must be held accountable.

On access to finance, the study uphold that the Central Bank of Nigeria and commercial banks develop tailored funding programs for start-ups and small businesses with minimal collateral and business-friendly interest rates. Government must back these programs with guarantees and ensure funds are reaching genuine entrepreneurs, not political cronies.

Insecurity must no longer be treated as a distant problem—it is a direct threat to economic progress. The government must

invest in intelligence, technology, and local security initiatives to protect business owners and restore confidence in the safety of lives and investments across the country.

Furthermore, the current education system must be restructured to reflect the realities of a modern economy. Entrepreneurial thinking, innovation, and practical skill acquisition must be part of every Nigerian student's training from an early age. Our youths must be prepared not just to seek jobs, but to create them.

Finally, support systems like mentorship, business incubators, and innovation hubs must be prioritized. Government should partner with the private sector, NGOs, and international organizations to build these systems in every state, especially in underserved areas. Entrepreneurs should not be left to navigate the journey alone they need guidance, networks, and resources to scale their ideas into sustainable ventures.

In conclusion, Nigeria cannot afford to continue on its current path if it truly desires economic independence and inclusive development. Entrepreneurship is the key to unlocking wealth, reducing unemployment, and driving innovation. The country must act boldly, decisively, and immediately to eliminate the environmental constraints that stand in the way. Anything less is a betrayal of the potential and resilience of millions of Nigerians ready to build, innovate, and lead.

## **6.0 Contribution to Knowledge**

This study has made a significant contribution to the existing body of knowledge on entrepreneurship in Nigeria by critically examining the environmental constraints that continue to undermine the development of entrepreneurial ventures across the country. Unlike many previous studies that merely highlight these challenges in isolation, this work has taken a comprehensive, literature-driven approach to connect the dots between infrastructure deficits, policy instability, insecurity, lack of funding, cultural barriers, and weak support systems—all within the Nigerian context.

Focusing on documented literatures survey, this study fills a crucial gap in scholarly literature by synthesizing fragmented findings from various sources and presenting them as a unified narrative. It not only identifies the persistent challenges but also offers bold, actionable, and context-specific recommendations that reflect current realities rather than generic, theoretical solutions. This makes the study not just academically relevant, but also practically useful for policymakers, educators, financial institutions, and development agencies.

Furthermore, this study strengthens the argument that entrepreneurship in Nigeria cannot thrive in a vacuum. It must be deliberately supported by an enabling environment. By asserting this position clearly and strongly, the work challenges the prevailing notion that entrepreneurs

fail solely due to personal inadequacies or lack of skills. Instead, it shifts the focus toward the structural and systemic issues that must be addressed as a matter of urgency.

In essence, this study contributes a strong, unremorseful voice to the ongoing discourse, demanding that environmental current realities and as a map pointing the way forward.

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**MODERATING ROLE OF SOCIO-ECONOMIC FACTORS ON THE  
RELATIONSHIP BETWEEN ENTREPRENEURIAL COMPETENCIES AND  
PERFORMANCE OF SMES IN KANO STATE**

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**Abstract**

*The objective of this study is to investigate the moderating role of socio-economic factors on the relationship between entrepreneurial competencies and performance of SMEs in Kano State. The study adopted cross sectional survey research design was employed, and the population consists of the entire registered SMEs with Kano State Chamber of Commerce, Industry, Mines and Agriculture [KACCIMA], as at the year 2021. By adopting random sampling, PLS-SEM-Regression, correlation and descriptive were used to analyze the data. The finding revealed that networking, relationship, training and marketing competencies, have significant effect on SMEs performance in Kano state, while Socio economic factor has significant effect with SMEs performance in Kano state, Socio economic factor moderate the between entrepreneurial competency and SMEs performance in Kano state. The study recommended that, Entrepreneurs should create a high sense of persistence in achieving their pre-determined goals and objectives, they should endeavour to explore variety of training and development that will help develop creativity and innovative ideas in their organization. Government must put in place sustainable policies that do not deal with frequent changes, which will assist entrepreneurs in planning.*

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**Keywords:** *SMEs Performance, Socio-Economic Factors, Entrepreneurial Competencies*

**1.0 Introduction**

The contributions of entrepreneurial ventures to many countries across the world cannot be overemphasized. The

United Nations Development Programme (2020) reports that about 1.3 billion people in 107 developing countries are multi-dimensionally poor. These alarming

conditions have led many policymakers, industrialists, and researchers to suggest the use of entrepreneurship to boost economic activities through the creation of jobs, thus providing the populace with a source of livelihood (Padi, 2022; Suleiman, Aliyu, & Bello, 2021). Entrepreneurship is recognised as a vital catalyst for economic expansion, employment creation, and innovation, particularly in emerging economies such as Nigeria (Bello, 2025; Acs et al., 2008; Oyelaran-Oyeyinka, 2020). Also, the Global Entrepreneurship and Development Institute (2019) developed an index that compares the level of entrepreneurship among different countries in the world, which shows that the United States of America (USA) has the highest entrepreneurship index of 83.6%, followed by China with 41.1% in the Asian region, while South Africa topped the table with 32.9% in the African region, followed by Ghana with 21.2% and then Nigeria with 19.7%, hence the need to encourage entrepreneurship development in Nigeria.

The performance of Small and Medium Enterprises (SMEs) in Nigeria has been subpar, hindering their potential to drive economic growth and development (Ibrahim et al., 2024). This underwhelming performance has sparked concern among stakeholders, including the government, citizens, operators, and private sector organizations (Larios-Francia & Ferasso, 2023). A closer examination reveals that most Nigerian SMEs struggle to survive beyond two

years, with the majority employing no fewer than 10 workers and contributing minimally to the country's GDP. In Kano, for instance, few entrepreneurial ventures successfully transition into medium-sized enterprises, and even fewer achieve significant sales, profit growth, or expansion (Ibrahim et al., 2024). Furthermore, many SMEs operate in precarious conditions, with limited access to capital, inadequate infrastructure, and insufficient resources to support growth (Larios-Francia & Ferasso, 2023). The failure of SMEs to thrive and succeed may discourage aspiring entrepreneurs and graduates from pursuing entrepreneurial ventures, instead opting for employment. This, in turn, may perpetuate Nigeria's underdevelopment, characterized by low GDP, limited job creation, and persistent unemployment challenges (Ibrahim et al., 2024).

Meanwhile, the performance of most Small and Medium Enterprises (SMEs) in Nigeria remains suboptimal, with a significant number ceasing operations shortly after inception. A staggering statistic reveals that approximately 80% of SMEs in the country fold up before reaching their fifth anniversary (SMEDAN, 2013; Abdullahi et al., 2020). The performance and growth of SMEs are crucial indicators of a nation's industrialization, modernization, urbanization, and employment opportunities, as well as its income distribution, welfare, and overall quality of life (Aremu & Adeyemi, 2021). Despite various government and non-

governmental initiatives aimed at promoting SME performance in Nigeria, such as financial support and training, many SMEs continue to underperform, failing to play a vital role in the country's economic development (Abdullahi et al., 2020). This situation has sparked concern among stakeholders, including government officials, citizens, business operators, and private sector organizations. The alarming rate of SME failures in Nigeria is evident, with only 20% of entrepreneurs achieving success, while a whopping 80% of businesses collapse due to poor performance (Abdullahi et al., 2020).

Numerous factors contribute to the success or failure of Small and Medium Enterprises (SMEs), including competition, access to financial capital, government support, and market access. However, innovation plays a vital role in determining the success of SMEs, even when other factors are in place. Without innovation, SMEs are likely to continue struggling, which is why it is essential for them to adopt innovative approaches to succeed and contribute to national development. Although the importance of innovation for SME success is well recognized, there is a significant research gap in understanding the causes of SME failure and the extent to which innovation contributes to their success. This study aims to address this gap by investigating the impact of innovation on SME performance in Kano, Nigeria, and exploring the extent to which innovation influences their success.

According to Ufonna (2021) a critical examination of the rise and fall of Micro, Small, and Medium Enterprises (MSMEs) reveals that government agencies, higher education institutions, and former businesses have not provided adequate training for entrepreneurs in crucial areas such as calculated risk-taking, persistence, innovation, and opportunity recognition. As a result, entrepreneurs are expected to possess these essential entrepreneurial competencies before embarking on business ventures. However, research findings on the relationship between entrepreneurial competence and performance have been inconsistent, with some studies reporting positive correlations and others finding negative associations (Covin & Miles, 2019). This ambiguity motivates the current study to investigate the moderating effect of socioeconomic factors on the relationship between entrepreneurial competence (independent variable) and the performance of SMEs (dependent variable), shedding light on the complex interplay between these variables.

The absence of entrepreneurial competence is a significant obstacle hindering the performance and growth of small and medium enterprises (SMEs) (Amoako et al., 2021). Despite this, there exists a research gap in understanding the precise relationship between entrepreneurial competence and SME performance, particularly in light of recent developments and changes in the business environment. Furthermore, existing research has not adequately explored the

theoretical intersection of entrepreneurial competencies and performance within a single study (Ibidunni et al., 2018). Mitchelmore and Rowley (2023) emphasize the need for investigating entrepreneurial competencies that impact small business performance. Examining the empirical relationship between entrepreneurial competencies, socioeconomic factors, and small business performance can be seen as a crucial stepping stone for future researchers seeking to elucidate this vital link (Hashim et al., 2018). As highlighted by Kaluarachchige et al. (2021) and Parida et al. (2023), additional research is necessary to understand the socioeconomic factors influencing SME performance, thereby enhancing the existing body of knowledge. This study aims to address this research gap by exploring the relationship between entrepreneurial competence, socioeconomic factors, and SME performance.

While entrepreneurs are becoming increasingly creative and innovative, the absence of competence can severely hinder business growth. To mitigate the negative consequences of a challenging business environment, entrepreneurs must adopt a proactive approach (Ibrahim & Abu, 2020). The importance of entrepreneurial competencies cannot be overstated, yet some entrepreneurs lack essential qualities such as creativity, risk-taking, passion, proactivity, and a willingness to acquire new skills. This deficiency can be attributed to knowledge gaps or inadequate information. To

overcome this, business owners must strive to develop innovative, risk-taking, passionate, and dutiful mindsets, while being receptive to learning new skills that foster competence (Zahra, 2021). Entrepreneurs are faced with the challenge of enhancing their competencies to succeed in entrepreneurial endeavors (Brinckmann, 2018). Although some studies have explored the relationship between managerial or entrepreneurial competencies and firm performance, further research is necessary to fully understand this dynamic (Chandler & Hanks, 2023).

Man et al. (2012) addressed the theoretical and practical gaps in existing research by developing a theoretical framework that integrates the concept of competitiveness for Small and Medium Enterprises (SMEs) with the competency approach to studying entrepreneurs' characteristics. This competency approach emphasizes that the underlying quality of high-performing workers lies in their "competencies," which is a departure from the traditional approach that focused on specific job elements (Oluwajoba, 2017). Instead, the competency approach evaluates individuals who have achieved success in their careers. The framework developed by Man et al. (2012) highlights the entrepreneur's role in determining firm performance and is particularly applicable to smaller firms that bear the name of the entrepreneur or founder. By utilizing this framework, the present study conducted an empirical investigation to analyze the relationship between entrepreneurs'

competencies and the performance of SMEs. Specifically, this research aims to address gaps in the literature by exploring answers to several key questions, which will be discussed in subsequent sections.

There is dearth empirical study that examined the link between entrepreneurial competencies and performance with socioeconomic factors as moderator. This research seeks to contribute to the literature by investigating the moderating role of socio economic factors on the relationship between entrepreneurial competencies and performance of SMEs in Kano, Nigeria. In line with this, the study set the following objectives:

- i. To evaluate the effect of networking competency on SMEs performance in Kano Metropolis.
- ii. To examine the effects of relationship competency on SMEs performance in Kano Metropolis.
- iii. To assess the impact of training competency on SMEs performance in Kano Metropolis.
- iv. To examine the effect of marketing competency on SMEs performance in Kano Metropolis.
- v. To examine the moderating effect of Socio economic factor on the relationship between networking competencies and SMEs performance in Kano Metropolis.

- vi. To understand the moderating effect of Socio economic factors on the relationship between relationship competencies and SMEs performance in Kano Metropolis.
- vii. To evaluate the moderating effect of Socio economic factors on the relationship between training competencies and SMEs performance in Kano Metropolis.
- viii. To examine the moderating effect of Socio economic factors on the relationship between marketing competencies and SMEs performance in Kano Metropolis.

## **2.0 Literature Review**

### **2.1 SMEs Performance**

The World Bank (2013) defines Small and Medium Enterprises (SMEs) based on the size of the enterprise, considering factors such as the total number of employees and total assets value. However, definitions of SMEs vary across African countries (Stork & Esselaar, 2006). In Ghana, SMEs are defined as businesses with 6-90 employees and fixed assets worth up to 2.5 billion Ghana Cedi. In Nigeria, SMEs are characterized as firms with fewer than 200 employees and total assets worth less than 500 million Naira, excluding land and buildings (SMEDAN, 2013). Specifically, in Nigeria, "small enterprises" refer to SMEs with fewer than 50 employees and assets valued between N5 million and N50 million, while "medium enterprises" have 50-199

employees and assets worth N50 million to N500 million (Ibrahim et al., 2024). For the purpose of this research, SMEs are defined as businesses with fewer than 200 employees and assets valued between N5 million and N500 million. The performance and effectiveness of SMEs in driving economic growth and development in Nigeria have been under scrutiny (Ihua, 2009). Despite their potential, SMEs in Nigeria have fallen short of expectations, characterized by low performance and inefficiency. This has raised concerns about the ability of SMEs to contribute to economic growth and national development in Nigeria.

## **2.2 Entrepreneurial Competencies**

Entrepreneurial competencies refer to the underlying characteristics, including traits, motives, knowledge, skills, and self-images, that enable the creation, survival, and growth of a new venture (Bird, 1995). Similarly, Baum et al. (2001) define competencies as individual characteristics, such as knowledge, skills, and abilities, required to perform a specific job. By synthesizing findings from various studies, including Man (2001), Man and Lau (2000), and Ahmad and Seet (2009), a framework is developed to identify key competencies linked to the role of SME entrepreneurs. These competencies encompass strategic, conceptual, opportunity, personal, learning, ethical, familism, leadership, marketing, management, and relationship competencies (Ahmad, 2007; Man, 2001). Previous studies have recommended assessing specific competencies across

various industries and firm sizes to enhance the generalizability of competency models (Ahmad et al., 2011; Mitchelmore & Rowley, 2010; Salah et al., 2015). Given the limited research on strategic, training, and network competencies, this study focuses on assessing these specific areas.

## **2.3 Socioeconomic Factors**

Socioeconomic factors encompass the social and economic elements that shape the dynamics of a society. Various socioeconomic factors, including an entrepreneur's age, investment size, access to capital, education, experience, skills, and training, have been identified as crucial determinants of business success (Saleem, 2012). The American Psychological Association (APA) defines socioeconomic status (SES) as an individual's or group's social standing or class (APA, 2018). SES is commonly used as a latent construct to measure family background (Bofah & Hannula, 2017). However, there is no consensus among empirical studies on the best approach to operationalize SES. The measurement of SES often receives limited attention, with inadequate discussion on the selection of specific indicators (Bornstein & Bradley, 2014). Liberatos et al. (1988) argued that there is no single optimal measure of SES, as the choice of measure depends on various factors, including conceptual relevance, the role of social class in the study, applicability to the specific population, relevance at the time of the study, reliability and validity, number of

indicators, level of measurement, simplicity, and comparability with other studies.

#### **2.4 Socioeconomic factors, Entrepreneurial Competencies and SMEs Performance**

Previous studies on the relationship between entrepreneurial competencies and firm performance have yielded mixed results. For instance, Ufonna (2021) found that entrepreneurial competence variables such as risk-taking, persistence, innovation, and opportunities have a significant influence on organizational performance. In contrast, Mushtaq et al. (2021) discovered that entrepreneurial competencies have a negative significant effect on performance in information and communication technology firms in Pakistan. However, Kaluarachchige et al. (2021) revealed that competencies and orientation of entrepreneurs have a significant effect on organizational performance. Barine (2021) also concluded that entrepreneurial competencies affect the performance of small and medium-scale enterprises positively and significantly. On the other hand, some studies found no significant relationship between entrepreneurial competencies and firm performance. For example, Esubalew and Raghurama (2020) found that entrepreneurs' competency has no significant effect on the performance of micro, small, and medium enterprises (MSMEs) in Ethiopia. Nevertheless, other studies have reported positive relationships between entrepreneurial competencies and

entrepreneurial performance. Khan et al. (2020) analysis revealed positive relationships between entrepreneurial competencies and entrepreneurial performance in Pakistan. Similarly, Jamie and Oliver (2020) found that engaging in entrepreneurial core competencies, personal traits, and learners' skills are positively related to business success.

Research by Esubalew and Raghurama (2020) investigated the mediating role of entrepreneurs' competency in the relationship between bank finance and Micro, Small, and Medium Enterprises (MSMEs) performance. Their findings indicated that entrepreneurs' competence had an insignificant impact on MSMEs' performance. However, the authors suggested that this outcome might be attributed to variations in moderating variables such as cultural context and economic status. Consequently, they recommended that future studies incorporate these moderating variables to provide a more comprehensive understanding of the relationship between entrepreneurs' competence and MSMEs performance. In a separate study, Ufonna (2021) examined the relationship between entrepreneurial competencies and performance, focusing on four specific competencies: risk-taking, innovation, persistence, and opportunity recognition. The study's findings highlighted the need for future research to explore additional entrepreneurial competencies, including networking, relationship-building, training, and marketing competencies. By investigating these competencies, researchers can gain a deeper

understanding of the complex relationships between entrepreneurial competencies and MSMEs performance.

Previous research has attempted to categorize the characteristics and competencies of entrepreneurs. For instance, Huck and McEwen (2021) identified planning, budgeting, and marketing as the most critical competency areas for Jamaican entrepreneurs. In contrast, Chandler and Jansen (2021) emphasized the importance of opportunity recognition, forecasting, and seeing business ventures through to completion. By examining the actual behavior of entrepreneurs, researchers can investigate entrepreneurial competencies from a process-oriented perspective. According to Man et al. (2022), competencies involve interactions with the environment, such as cooperation, relationship-building, persuasive ability, communication, and interpersonal skills. Bird (2015) described relationship-building as "entrepreneurial bonding," which encompasses forming and reforming relationships. Successful entrepreneurs typically possess strong competencies in committing to and driving tasks to completion, as highlighted by Chandler and Jansen (2021). This entrepreneurial role involves taking positive actions towards responsibilities and tasks, ultimately driving the firm towards success and achieving desired outcomes.

Furthermore, some studies have identified specific competencies that have a significant impact on firm performance.

Ango and Solomon (2018) found that skill competency and personality competency have a significant impact on the performance of small and medium-scale enterprises. Ahmad et al. (2018) discovered that only implementation and network competencies have a positive effect on firm performance. Hanif et al. (2018) analysis showed that both entrepreneurship orientations and knowledge management processes have a positive effect on the bank's performance. Finally, Zizile and Tendai (2018) emphasized that entrepreneurial competencies are crucial for the survival and performance of SMEs. However, several attempts have been made to moderate the relationship between different independent variables and firm performance but to the best knowledge of the researcher none of these studies used or proposed socioeconomic factors as moderating variable.

Previous studies such as; Kassa, (2021); Abdullahi, Murat, and Isaac (2020); Gathii and Ngura (2015); Kamau and Mathew (2015); Rotich, Cheruiyot, and Yegon, (2014); Aworemi, Abdul-Azeez and Opoola (2010) shows a significant relationship between socioeconomic factors and firm performance. Furthermore, several studies used socioeconomic factors as moderating variable and concluded that it is a good moderating variable. Thus, based on the empirical researches reviewed, this study proposed the following hypotheses:

*H01: There is no significant relationship between networking competency and SMEs performance in Kano Metropolis.*

*H02: There is no significant relationship between relationship entrepreneurial competency and SMEs performance in Kano Metropolis.*

*H03: There is no significant relationship between training entrepreneurial competency and SMEs performance in Kano Metropolis.*

*H04: There is no significant relationship between marketing entrepreneurial competency and SMEs performance in Kano Metropolis.*

*H05: A Socio economic factor does not moderate the relationship between*

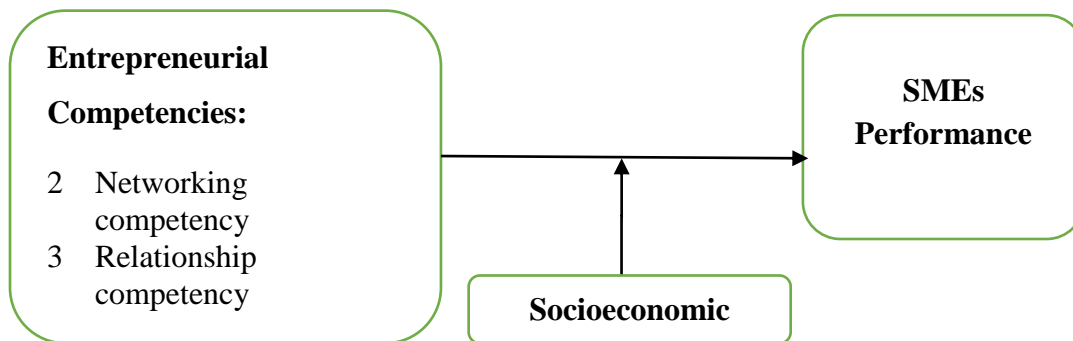
*networking entrepreneurial competencies and SMEs performance.*

*H06: A Socio economic factor does not moderate the relationship between relationship entrepreneurial competencies and SMEs performance.*

*H07: A Socio economic factor does not moderate the relationship between training entrepreneurial competencies and SMEs performance in Kano Metropolis.*

*H08: A Socio economic factor does not moderate the relationship between marketing entrepreneurial competencies and SMEs performance in Kano Metropolis.*

## 2.5 Research Framework/Model and Underpinning Theory



Source: Research (2025)

This study is grounded in the Resource-Based View (RBV) perspective (Barney, 1991), which posits that organizations can gain a competitive advantage by leveraging their internal resources and capabilities rather than solely focusing on the external competitive environment.

According to Barney (1991), for resources to be a source of sustained competitive advantage, they must possess four attributes: Value, Rarity, Imitability, and Organizational (VRIO). The theory suggests that entrepreneurs with unique skills and competencies can gain a

competitive edge that is difficult for competitors to replicate. In this context, the theory provides a framework for understanding how entrepreneurs can leverage their skills and competencies to achieve higher performance and gain a competitive advantage.

### **3.0 Method**

This study adopted cross-sectional survey research design as data were collected at a single point in time. The population of the study consists of all the 514 registered business selected within Kano (Kano State Chamber of Commerce, Industry, Mines and Agriculture (KACCIMA), 2023). A sample size of 217 SMEs was used to represent the entire population, through Krejcie and Morgan's (1970) sampling table. This research has used both stratified and random sampling, this techniques were adopted because the population of the study is heterogeneous, stratified sampling technique was used to obtain a representative sample (stratum), then simple random sampling was applied for each stratum to get an equal sample size from each stratum. The researchers used primary sources of data, where data was collected by using administered

questionnaire. The dependent variable is SMEs performance, the independent variable is entrepreneurial competencies measured by networking, relationship, training and marketing competencies and the moderating variable is socio economic factor. For the purpose of presentation and discussion of the result of data generated in the course of these research, descriptive statistics, correlation and regression techniques of data analysis were used through SPSS version 22 and Smart-PLS V4 statistical tools of analysis.

### **4.0 Result and Discussion**

#### **4.1 Data Screening**

The results for missing values analysis shows that there was no missing values as the questionnaires not properly or completely filled was excluded from the analysis. Meanwhile, outliers were detected using Mahalanobis distance, were only thirty two (32) multivariate outliers were identified and subsequently deleted from the dataset. Hence, the remaining 217 valid datasets were finally used for the main the PLS-SEM analyses.

## 4.2 Diagnostics Testing

**Table 1: Test for Independence**

	Collinearity Statistics	
	Tolerance	VIF
NEC	.352	2.845
REC	.329	3.042
TRC	.339	2.951
MAC	.288	3.470
SEF	1.000	1.000

Source: Field Survey, 2025

According to the results in Table 1, it shows that the VIF for all the variables individually is below 10. NEC (2.845), REC (3.042), TRC (2.951), MAC (3.470) and SEF (1.000). The tolerance for all variables: NEC (0.352), REC (0.329),

TRC (0.339), MAC (0.288) and SEF (1.000). Were all greater than 0.1 or 10%. Therefore, the result shows that there is no independence among the variables. This was an indication that they are reliable to estimate.

**Table 2: Tests of Normality**

	Skewness	Kurtosis
PM	-1.000	1.197
NEC	-.694	.108
REC	-.392	-.530
TRC	-.387	-.467
MAC	-.369	.291
SEF	-.132	.004

Source: Survey, 2025

Accordingly, the study examined the normality of the data and the values of Skewness and Kurtosis of each variable as illustrated in Table 2. Accordingly, all Skewness and Kurtosis values of the variables are found within the prescribed levels as per the research results. Therefore the data are deemed to be

distributed with a high approximation to normality.

## 4.3 Descriptive Statistics

The descriptive statistics shows the mean and standard deviation of each independent variable from the mean and standard deviation of the dependent variable.

**Table 3: Descriptive Statistics of the study Variables**

	N	Mean	Std. Deviation
PM	217	4.1962	.6826
NEC	217	3.9377	.6649
REC	217	4.1327	.6796
TRC	217	3.9809	.6577
MAC	217	4.1898	.6374
SEF	217	3.6517	.77785

Source: Field Survey, 2025

Table 3 shows the descriptive statistics result of the dependent and independent variables. A total of 217 observations were recorded. PM (SMEs performance) which is dependent variable has an average of 4.19 and standard deviation of 0.682 showing that there is much differences among the response to the questions on PM. NEC (Networking Competency) has an average of 3.93 and standard deviation of 0.664 showing that there is much differences among the response of to the questions on NEC. REC (Relationship Competency) has an average of 4.13 and standard deviation of 0.679 showing that there is much differences among the response of to the questions on REC. TRC (Training Competency) has an average of 3.98 and standard deviation of 0.679 showing that there is much differences among the response of to the questions on TRC. MAC (Marketing Competency) has an average of 4.18 and standard deviation of

0.637 showing that there is much differences among the response of to the questions on MAC. SEF (Marketing Competency) has an average of 3.65 and standard deviation of 0.778 showing that there is much differences among the response of to the questions on SEF.

#### 4.4 Correlation Result

The correlation result shows the relationship between each independent variable and the dependent variable. The values of the correlation coefficient range from -1 to 1. The sign of the correlation coefficient indicates the direction of the relationship (positive or negative) the absolute value of the correlation coefficient indicates the strength, with larger values indicating stronger relationships and lower values indicating weak relationships. The correlation coefficients on the main diagonal are 1.0 because each variable has a perfect positive linear relationship with itself.

**Table 4: Correlation Matrix**

	PM	NEC	REC	TRC	MAC	SEF
PM	1					
NEC	.641	1				
REC	.641	.753	1			
TRC	.699	.714	.703	1		
MAC	.739	.729	.763	.781	1	
SEF	.693	.729	.747	.763	.781	1

Source: Field Survey, 2025

**4.5 PLS-SEM Path Model Results**

This study adopted a two-step process to evaluate and report the results of PLS-SEM path, as suggested by Hair, Hult, et al., (2016). The two-step process adopted include: (1) measurement model and (2) structural model (Mohseni, et al., 2016).

**4.5.1.1 Individual Item Reliability**

According to Carmines and Zeller (1979), the reliability of an individual item is confirmed when its standardized loading is 0.50 or higher. As shown in fig. 3, for each latent construct, all standardized loadings have exceeded the Zeller and Carmines (1981) accepted cut- off point of 0.505, and those below the threshold except of eight items which were deleted from the Measurement model. Thus, individual indicator reliability has been found to be

acceptable based on the measurement model results.

**4.5.1.2 Internal Consistency Reliability**

Reliability test is done in order to show the internal consistency of the measuring instrument used (Wahab & Tentama, 2020). The internal consistency of measures is indicative of the homogeneity of the items in the measure that tap the construct. Internal consistency reliability for this study was examined by means of composite reliability coefficient as suggested by Hair, et al., (2013), and Cronbach Alpha coefficient. The composite reliability coefficient for each latent construct should exceed 0.70 (Bagozzi & Yi, 1988) and Cronbach Alpha coefficient value closer to 1, indicate higher internal consistency reliability of the instrument (Sekaran, 2003).

**Table 5: Cronbach’s Alpha, Composite Reliability and Average Variance Extracted**

	<b>rho_A</b>	<b>Composite Reliability</b>	<b>Average Variance Extracted (AVE)</b>
MAC	0.7	0.814	0.525
NEC	0.737	0.832	0.554
REC	0.576	0.777	0.539
SEF	0.269	0.715	0.563
SMES Performance	0.787	0.862	0.609
TRC	0.73	0.819	0.534

Source: Field Survey, 2025

Hair et al (2011), provided rule of thumb for internal consistency reliability using composite reliability coefficient suggesting that the composite reliability coefficient should be at least .70 or more. Giving table 5 above the least composite reliability coefficients value for this study is 0.715, demonstrating adequate internal consistency reliability. Chin (1998) recommends that the AVE of each latent construct should be .50 or more. Following Chin (1998), the AVE values (see Table 5) exhibited high loadings ( $\geq .50$ ) on their respective constructs, indicating adequate convergent validity.

#### 4.5.1.3 Discriminant Validity

Discriminant validity is another criterion which assesses the degree to which variable is truly different from other variables (Hair et al., 2010). For the purpose of this study, discriminant validity was ascertained using Hetetrait-monotrait ratio of correlation and fornell and Larker (1981) criterion as suggested by (Ramaya, et al., 2018). For the Hetetrait-monotrait ratio of correlation the highest value is 0.810 which is well below the threshold of 0.85 and 0.90 as

suggested by (Kline, 2011 & Gold et al. 2001). Thus the HTMT inference does not indicate discriminant validity problems in this study. For the Fornell and Larcker (1981) criterion, this was achieved by comparing the correlations among the latent constructs with square roots of average variance extracted. The value of discriminant validity test shows that the root of the Average Variance Extracted in each aspect is higher than the root of the AVE in other aspects. So, the discriminant validity criteria based on Fornell & Larcker, (1981) are met.

#### 4.4.2 Structural Model

After the measurement model is found worthwhile based on Reliability and Validity, it is expected that the structural model be discussed to examine the real effect of the path coefficients of the study variables. For the purpose of this study standard bootstrapping using 5000 bootstrapped samples to assess the significance of path coefficients were employed as suggested by (Hair et al., 2014). Table 6 below shows the estimates for the structural model.

**Table 6: Structural Model Result**

Hypotheses	Relationship	Beta	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	Findings
H1	MAC	0.186	0.069	2.725	0.003	Not supported
H2	NEC	0.434	0.066	6.575	0.000	Not supported
H3	TRC	0.126	0.047	2.766	0.003	Not supported
H4	REC	0.144	0.071	2.042	0.021	Not supported
H5	SEF-NEC- SMES PERF -> SMES Performance	-0.207	0.155	1.8	0.036	Not supported
H6	SEF-REC- SMES PERF -> SMES Performance	0.051	0.153	0.699	0.242	Supported
H7	SEF-TRC- SMES -> SMES Performance	-0.129	0.119	1.374	0.085	Supported
H8	SEF-MAC- SMES PER - > SMES Performance	0.02	0.143	0.568	0.285	Supported

Note: MAC = Marketing NEC = network competency; REC = relationship competency; TRC = training competency; SMEP = SME performance; Note: \*\*\*Significant at 0.01 (1-tailed), \*\*significant at 0.05 (1-tailed), \*significant at 0.1 (1-tailed).

**4.5 Hypotheses Testing**

Regarding the significance of the structural path coefficients, of the eight hypotheses postulated and tested, H1, H2, H3, H4, and H5 were statistically significant, while H6, H7 and H8 was not found to be statistically significant. It could be recalled that Hypothesis 1 predicted that there is no significant relationship between network competency and SME performance. As indicated in Figure 4 and Table 6, a significant positive relationship between network competency and SME

performance was found ( $\beta = 0.434$ ,  $t = 6.57$ ,  $p < 0.01$ ). Accordingly, Hypotheses 1 was not supported. The findings is in line with previous empirical research (Pulka, Ramli, & Mohamad, 2021; Sakib et al., 2022) that found significant relationship between network competency on SMEs performance and also supported by resource base theory. Hypothesis 2 predicted that there is a no relationship between relationship entrepreneurial competency and SME performance. Results (Figure 4 and Table 6) indicated that relationship competency had a

significant positive relationship with SME performance ( $\beta = 0.144$ ,  $t = 2.042$ ,  $p < 0.01$ ), there by rejecting Hypothesis 2. Similarly, Hypothesis 3 predicted that there is no relationship between training competency and SME performance. Therefore hypothesis three is not supported. As shown in Figure 4 and Table 6. The findings is in line with previous empirical research (Goyal & Mishra, 2023; Pulka et al., 2021; Puteri Fadzline, Juhary, & Nazaruddin, 2017; Sakib et al., 2022) that found significant relationship between entrepreneurial competency on SMEs performance and also supported by resource base theory.

Hypothesis 4 predicted that there is a no relationship between relationship marketing competency and SME performance. Results (Figure 4 and Table 6) indicated that there is a positive significant relationship between marketing competency with SME performance ( $\beta = 0.186$ ,  $t = 2.725$ ,  $p < 0.01$ ), there by rejecting Hypothesis 4. The findings is in line with previous empirical research (Makhmutova, 2021; Pulka et al., 2021; Sakib et al., 2022) that found significant relationship between network competency on SMEs performance and also supported by resource base theory. Hypothesis 5 postulated that socio-economic factors does not moderates the relationship between network competency and SME performance. Specifically, this relationship is stronger (i.e. more positive) socio-economic factors is highly competitive. The results shown

in Figure 4 and Table 6 indicated that the interaction terms representing network competency and socio economic factors, towards predicting SME performance ( $\beta = -0.15$ ,  $t = 1.8$ ,  $p < 0.01$ ) was statistically significant. Hence, Hypothesis 5 was not supported. The moderating role of socio economics factors on the relationship between network competencies on entrepreneur competencies might be because of the context which is a commercial Hub. As we are aware Kano is a commercial Hub and networking is very important in business.

Hypothesis 6 postulated that socio-economic factors does not moderates the relationship between relationship competency and SME performance. Specifically, this relationship will be stronger (i.e. more positive) socio-economic factors is highly competitive. The results shown in Figure 4 and Table 6 indicated that the interaction terms representing relationship competency and socio economic factors, towards predicting SME performance ( $\beta = 0.05$ ,  $t = 0.24$ ) was statistically insignificant. Hence, Hypothesis 6 was supported. Hypothesis 7 postulated that socio-economic factors does not moderates the relationship between training competency and SME performance. Specifically, this relationship is stronger (i.e. more positive) socio-economic factors is highly competitive. The results shown in Figure 4 and Table 6 indicated that the interaction terms training

competency and socio economic factors, towards predicting SME performance ( $\beta = 0.129$ ,  $t = 0.699$ ) was statistically insignificant. Hence, Hypothesis 7 was supported. Hypothesis 8 postulated that socio-economic factors does not moderates the relationship between marketing competency and SME performance. Specifically, this relationship is stronger (i.e. more positive) socio-economic factors is highly competitive. The results shown in Figure 4 and Table 6 indicated that the interaction terms representing marketing competency and socio economic factors, towards predicting SME performance ( $\beta = 0.02$ ,  $t = 0.568$ ) was statistically insignificant. Hence, Hypothesis 8 was supported.

## **5.0 Conclusions**

The study reviewed the moderating effect of socio economic factor on the relationship between entrepreneurial competency and SMEs performance in Kano state. The study examined the moderating effect of socio economic factor on the relationship between entrepreneurial competencies (networking, relationship, training and marketing) on SMEs performance in Kano state. A research model was developed to explain the various variables. The research was based on resource based theory. The study found that socio economic factor moderate the relationship between entrepreneurial competencies (networking, relationship, training and marketing) and SMEs performance in Kano state.

## **5.1 Recommendations**

The study presents the following recommendations;

- i. Entrepreneurs / business owners should create a high sense of persistence in achieving their pre-determined goals and objectives.
- ii. Entrepreneurs / business owners should Endeavour to explore variety of training and development that will help develop creativity and innovative ideas in their organization.
- iii. Government must put in place sustainable policies that do not deal with frequent changes, which will assist entrepreneurs / business owners in planning.
- iv. Employees can benefit from training and development programs can focus areas such as opportunity recognition, decision-making, financial literacy, and leadership skills.
- v. Small enterprises should prioritize competencies relates to adaptability and resilience, especially in dynamic and uncertain environments. The ability to pivot in response to changing market condition and to persevere through challenges can significantly impact performance.

## 5.2 Suggestion for Further Study

This study only looked at four variables of entrepreneurial competencies. Future researchers should study other entrepreneurial competencies variables. Mediating and moderating factor can explore the mediating and moderating

factor that may influence the relationship between entrepreneurial competencies and SME performance. Further study could examine the role of industry dynamics, external environment, or access to finance as moderating effect or factors.

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## IMPACT OF BOARD INDEPENDENCE, BOARD RISK MANAGEMENT AND BOARD FOREIGN DIVERSITY ON FINANCIAL DISTRESS OF MANUFACTURING FIRMS LISTED ON THE NIGERIAN EXCHANGE GROUP

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### **Abstract:**

*This study was motivated by the observed persistent financial distress confronting the manufacturing sector, a phenomenon that has emerged as a critical concern in Nigeria and other developing economies. Given the sector's fundamental contribution to national development, understanding the underlying causes and implications of financial distress remains imperative. Its primary objective was to investigate how corporate governance mechanisms affect the likelihood of financial distress of manufacturing firms listed on the Nigerian Exchange Group (NGX). The research used agency theory and employed a quantitative longitudinal research design, using data extracted from the audited annual financial reports of listed manufacturing firms over an eleven-year period from 2014 to 2024. The study focused on a population of all eighty (80) manufacturing firms listed on the NGX as at 31<sup>st</sup> December, 2024. A purposive sampling technique was applied, investigating 40 of these firms based on complete audited annual financial reports published on the NGX. The descriptive statistic and pooled OLS regression were used for the data analysis. The pooled OLS regression results reveal that board risk management ( $\beta = 15.858$ ,  $p < 0.001$ ) and board foreign diversity ( $\beta = 34.636$ ,  $p < 0.001$ ) significantly mitigate financial distress, with board foreign diversity demonstrating the strongest protective effect among all governance mechanisms examined. Conversely, board independence ( $\beta = 1.628$ ,  $p = 0.882$ ) show no statistically significant effects on financial distress. The model explains 11.4% of variance in financial distress ( $R^2 = 0.102$ ,  $p < 0.001$ ), with control variables firm size and firm age demonstrating significant negative relationships with distress. This study recommends that manufacturing firms should establish mandatory independent risk management committees and pursue strategic board internationalization. While the investors and financial analysts should incorporate governance-weighted investment frameworks. The regulatory bodies (SEC, NGX, FRCN) should mandate board-level risk management committees, create incentives for board internationalization, develop early warning systems and integrate governance into industrial policy. The study contributes to corporate governance literature and offers actionable insights for policymakers, corporate boards, and investors that establishing dedicated risk management committees and pursuing board internationalization represent the most promising pathways for preventing financial distress among Nigerian manufacturing firms. Further, this study's novelty lies in its comprehensive eleven-year analysis (2014–2024), which allows for an in-depth assessment of financial distress trends, policy impacts, and government interventions within Nigeria's manufacturing sector.*

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**Keywords:** Financial Distress, Board Independence, Board Risk Management, Board Foreign Diversity, Grover's G-Score Model.

## **1.0 Introduction**

The manufacturing sector remains a cornerstone of global economic development, though regional contributions vary considerably. Globally, manufacturing accounts for roughly 16% of world GDP as of 2023, averaging 12.05% across 164 countries, reflecting its enduring importance even as economies shift toward services (World Bank Group, 2025). Leading economies show notable differences: China leads with 28% of GDP from manufacturing and over \$5 trillion in value added in 2022, while the United States contributes about 11% (\$2.6 trillion), Japan 20%, and Germany 18% (World Bank Group, 2025). Within Africa, North Africa leads at 15% in 2023, while South Africa contributed 524.5 billion rand (roughly \$29 billion) in 2023 (Galal, 2025). By Q4 2023, Nigeria's manufacturing sector contributed 8.23% to real GDP, although the sector employs over 1.5 million people across food processing, cement, textiles, and pharmaceuticals, it has hovered around 13% of GDP since 2020 (Galal, 2025).

One of the most significant threats confronting businesses, regardless of size or operational scope, is insolvency, as documented in early empirical work by Bello, Bala, and Falola (2016), who show that business failure rates over the past two decades have exceeded levels observed since the early 1930s. The authors attribute this trend to macroeconomic pressures such as high interest rates, recession-induced profit squeeze, heavy debt burdens, and

industry-specific factors, including regulatory constraints and operational characteristics. Weak corporate governance structures, particularly ineffective board oversight and poor alignment of managerial incentives have also been identified as critical contributors to firm vulnerability and insolvency risk (Bello, 2019; Bello, Kurfi, & Tijjani, 2021).

Despite the manufacturing sector's economic contributions, manufacturing firms in developed and developing countries, including Nigeria, have continued to experience persistent financial distress. Empirical evidence by Muamar (2020) and Ibrahim and Oloyede (2020) confirms that a substantial number of manufacturing firms face sustained financial distress. Reports by the United Nations Industrial Development Organization (UNIDO) (2020) and the World Bank further identify financial distress as a major post-COVID-19 challenge confronting manufacturing firms globally, with governance deficiencies and weak institutional controls exacerbating firms' exposure to financial instability (Bello, Kurfi, & Tijjani, 2021).

Globally, the manufacturing sector faces significant financial distress, leading to shutdowns and operational difficulties. In the UK, a 2018 report by *The Guardian* indicated that nearly half a million firms (493,296) were in financial distress at the beginning of 2018, with 174,039 companies entering insolvency by year-

end, representing a 0.7% increase from 2017. In Nigeria, the Manufacturing Association of Nigeria (MAN) (2024) reported that 767 manufacturing companies ceased operations and 335 experienced financial distress in 2023. Similarly, Abubakar et al. (2023) document financial distress among several Nigerian manufacturing firms, including Cadbury Nigeria Plc., Nigerian Breweries, Unilever, Honeywell Flour Mills, Nestlé Nigeria Plc., and Champion Brewery Plc., largely attributed to governance-related failures and ineffective corporate governance practices, consistent with earlier evidence linking ownership structure and governance quality to firm performance outcomes (Bello, 2019).

These instances of financial distress raise concerns about the governance of manufacturing businesses (Abubakar et al., 2023), particularly regarding board effectiveness, stakeholder protection, and accountability mechanisms, which remain central to firm survival and long-term value creation (Bello, Kurfi, & Tijjani, 2021).

Financial distress can be observed through a firm's declining performance, inability to meet financial obligations, lack of dividend distributions, cash flow and liquidity issues, and labour terminations (Theresa & Pradana, 2022). It can lead to bankruptcy, causing investor losses and economic downturns (Rizaky & Dillak, 2020). Liquidity constraints - reflecting a firm's inability to meet short-term obligations as they fall due are a key

channel through which financial distress manifests, particularly in capital-intensive manufacturing firms (Hameed, Kurfi, & Bello, 2020). Jhunjunwala (2024) highlights its broader impact, eroding investor confidence and slowing economic growth. Financial distress serves as an early warning for intervention (Ebimobowei et al., 2024), yet no comprehensive global solutions exist.

However, in previous research literature, factors affecting financial distress are generally categorized as internal or external (Hassan et al. 2023; Nursal et al. 2023; Wati & Kasingku 2022; Candradewi et al. 2021; Fiscienthar 2021). Internal factors include financial aspects like profitability, liquidity, and leverage, as well as non-financial aspects such as corporate governance, operational efficiency, and company characteristics (Hassan et al. 2023; Nursal et al. 2023; Wati & Kasingku 2022; Candradewi et al. 2021; Fiscienthar 2021). External factors consist of macroeconomic conditions like interest rates, GDP growth, and inflation (Hassan et al. 2023; Nursal et al. 2023; Wati & Kasingku 2022; Candradewi et al. 2021; Fiscienthar 2021). Olaniyan and Omotola (2020) noted that economic instability and poor corporate governance contribute to financial distress in the Nigerian manufacturing sector. Studies suggest that poor corporate governance is often a root cause of financial distress (Affes & Jarboui, 2023). Conversely, strong corporate governance can help companies avoid financial distress, improve firm's financial performance, and

contribute to economic growth (Affes & Jarboui, 2023). Studies by Soesetio (2023) and Bravo-Urquiza and Moreno-Ureba (2021) suggest that implementing good corporate governance can prevent financial distress.

The 2018 Nigerian Code of Corporate Governance (NCCG) aims to promote transparency, accountability, sustainability, integrity, and trust in the corporate sector through principles and guidelines for effective board composition, leadership, risk management, internal controls, and financial reporting. Etomi and Partners (2019) highlight these focuses of the NCCG. Lawal et al. (2022) view corporate governance as ensuring openness, honesty, transparency, responsibility, morality, and compliance with legal requirements. Fiscienthar (2021) posits that corporate governance mechanisms within a company can be implemented through supervision, ownership structure, or both. This paper examines the impact of board independence, board risk management, and board foreign diversity on the financial distress of listed manufacturing firms in Nigeria.

Board independence stands as one of the most important pillars of good corporate governance, acting as a crucial tool for mitigating conflicts between management and shareholders while strengthening firm oversight. When directors are independent - meaning they have no significant financial or personal ties to management, they are better positioned to provide

unbiased monitoring and strategic advice that can help prevent financial distress.

Prior empirical evidence documents divergent views regarding the effectiveness of board independence. Some strands of the literature suggest that independent directors enhance monitoring quality and strengthen oversight, while other perspectives argue that excessive board independence may weaken effectiveness due to limited firm-specific knowledge, informational asymmetry, and constrained involvement in strategic decision-making. Drawing on evidence from Nigerian listed firms, Bello, Kurfi, and Tijjani (2021) demonstrate that board independence can exert both positive and negative influences on market-related outcomes, underscoring the contextual nature of its governance role.

More recent studies extend this governance debate by linking board independence directly to firm survival and financial distress outcomes. Evidence from manufacturing firms indicates that board independence is statistically associated with firms' ability to withstand financial distress, reinforcing its relevance as a governance mechanism for enhancing corporate resilience (Mani et al., 2023; Ofori et al., 2024).

Complementing board independence, board risk management has become a specialized part of corporate governance that gained prominence after major financial crises around the world and increased regulatory scrutiny. Companies started establishing dedicated risk

management committees at the board level because they realized that managing risks properly needs dedicated, specialized, and focused attention from top organizational level. Recent research examining the impact of board risk management activities shows how important this has become for manufacturing companies, demonstrating that this governance tool is becoming increasingly vital (Ikpesu et al., 2022).

In today's increasingly interconnected global economy, board foreign diversity has emerged as another fundamental corporate governance mechanism. Referring to the inclusion of board members from diverse national origins that possess international business experience, multi-cultural competences and global network connections that enrich board deliberations and oversight has become a significant governance consideration as companies operate in an increased globalized business environment. The idea behind this comes from resource-based theory, which suggests that diverse human capital resources create a competitive edge. According to Mohsni et al. (2021), manufacturing companies, especially those that trade internationally or want to expand globally, can really benefit from having foreign directors who know how to navigate complicated international markets, understand different countries' rules and regulations, and manage operations across borders.

Studies on the relationship between corporate governance mechanisms and

financial distress present mixed findings. Hassan et al. (2023) found that board independence negatively affects financial distress in Nigerian manufacturing firms, while Humairoh and Nurulita (2022) and Binwai and Mustapha (2024) found no impact. Additionally, board-level risk management, which is expected to provide early warning signs and proactive measures against financial distress, is also inconsistently implemented across various Nigerian manufacturing companies, raising questions about its real effectiveness (Ibrahim & Yaya, 2022). Similarly, board foreign diversity is theorized to provide international best practices and fresh perspectives that help firms make strategic decisions, however its empirical impact on firm financial soundness in the Nigerian context remains limited and under-explored (Ezeani et al., 2024). Given these conflicting findings this paper intends to examine how three key corporate governance mechanisms—board independence, board risk management, and board foreign diversity—affect the likelihood of financial distress among manufacturing firms listed on the Nigerian Stock Exchange—area understudied in Nigeria (Umar et al., 2020). In addition, most existing literature focus on performance metrics rather than distress indicators, leaving a critical area understudied. This gap is particularly concerning given that effective corporate governance can be instrumental in preventing financial distress by ensuring judicious management and oversight. Lastly, the study intends to apply Grover's G-Score

model to assess financial distress likelihood from 2014 to 2023. Nayan et al. (2024) found this model to have the highest accuracy in predicting financial distress in manufacturing firms, recommending its use in future research. In light of the preceding analysis, the following research questions are proposed for investigation:

- i. To what extent does board independence has significant effect on financial distress of manufacturing firms listed on the Nigerian Exchange Group?
- ii. How does board risk management significantly influence financial distress of manufacturing firms listed on the Nigerian Exchange Group?
- iii. What is the impact of board foreign diversity on the likelihood of financial distress of manufacturing firms listed on the Nigerian Exchange Group?

## **2. Literature Review**

### **2.1. Concept of Financial Distress**

There have been several views regarding concept financial distress depending on how the scholars understood it. For instance, Walela et al. (2022) opined that financial distress is a situation that make companies unable to meet maturing financial obligations to their creditors and may result in restructuring and corporate bankruptcy. Furthermore, Rizaky and Dillak (2020) viewed financial distress as the level of financial difficulty of a company with indications of a decrease in the company's internal financial performance and can result in bankruptcy.

In light of the views above as well as for the purpose of this study, financial distress can be described as a state of consistent decline in the financial condition of a firm, which may lead to liquidation or bankruptcy.

### **2.2 Concept of Corporate Governance Mechanisms**

The concept of corporate governance was developed due to the need for regulation of companies. This is necessitated due to the prevalence of information asymmetry and conflict of interest between company's shareholders and managers. There are several views by different scholars regarding corporate governance. Scholars like Adeosun (2022) viewed the concept of corporate governance as a mechanism that gives structure to the processes and management of an organization through a series of established rules and practices. Additionally, Lawal et al. (2022) stated that corporate governance guarantees openness, honesty, transparency, responsibility, morality and ensures compliance with legal requirements that guides the establishment of organizations and their financial reporting practices.

Study by Wang and Chen (2020) described board independence as the ability of the board to make decisions without being influenced by management or other external factors. Again, Klein (2020) viewed the concept board independence as one that is free from management's influence and is able to exercise its fiduciary duties in the best

interests of the company and its shareholders. Therefore, independent boards play a crucial role in preventing financial distress through effective oversight of management decisions that protect company interests.

Frank and Ukpong (2023) viewed the concept of board risk management as the degree of autonomy and impartiality maintained by the members of the risk management committee within an organization. In addition, Gao et al. (2020) stated that independent of board risk management can provide a safety net against financial distress by ensuring that risks are assessed and mitigated objectively, without influence from management or other stakeholders. Therefore, board risk management independence represents the board's capacity to provide autonomous risk oversight and management, free from management influence, to prevent financial distress.

The concept of board foreign diversity has been explored by various researchers, few of them observed include; Hassan and Kim (2022) described the concept board foreign diversity as the composition of board members from diverse national origins who possess international business experience, multi-cultural competences and global network connections that enrich board deliberations and oversight. Similarly, Anderson et al. (2021) viewed board foreign diversity as the extent to which a corporate board includes members with foreign nationalities,

international educational qualifications, and substantial professional experience in different countries, contributing to enhance global market understanding and strategic decision-making capabilities. This study conceptualized board foreign diversity as the presence of foreign or international members on a company's board of directors.

## **2.3 Review of Empirical Studies**

### **2.3.1 Board Independence and Financial Distress**

Many studies have examined the relationships between board independence and financial distress across the globe. Some of the ones observed include; Binwai and Mustapha (2024) assessed how board independence and board gender diversity affect financial distress likelihood of listed consumer goods firms in Nigeria from 2008 to 2022. The data of the study were obtained from 13 consumer goods firms. Regression results show board independence had no significant effect, while board gender diversity significantly influenced financial distress likelihood of listed consumer goods firms in Nigeria. However, Begum et al. (2023) examined how board independence, auditor independence, auditor opinion, sponsor directors ownership, foreign shareholders, sales growth, performance, liquidity and firm size affect financial distress of pharmaceuticals firms listed on the Dhaka Stock Exchange between 2012 and 2021. A longitudinal research design was employed and data were obtained from 30 pharmaceuticals enterprises. Descriptive

and regression results demonstrate that board independence, auditor independence, auditor opinion, sponsor directors ownership, foreign shareholders, sales growth, performance, liquidity and firm size significantly influence financial distress.

Similarly, Hassan et al. (2023) investigated the influence of board independence, board composition, CEO duality, audit committee, firm size and leverage on financial distress of non-financial firms listed on the Pakistan Stock Exchange from 2014 to 2019. The data were obtained from 76 non-financial firms for the study. The regressions results demonstrate that board composition and CEO duality is having a positive significant link with financial distress while board independence, audit committee, firm size, and leverage have a negative but insignificant effect. Again, Kamau et al. (2023) assessed the impact of board independence, board size, audit committee independence and firm size on financial distress among the firms listed on the Nairobi Securities Exchange. The data were obtained from 39 firms sampled for the study. The study employed a Type I Sum of Squares approach using XLSTAT software for the analysis. The findings demonstrate that board size and firm size exhibit highly significant relationships with financial distress. Again, result on board independence reveals a statistically significant relationship with financial distress, underscoring the importance of

independent directors in mitigating financial risks.

### **2.3.2 Board Risk Management and Financial Distress**

Based on the little knowledge of the researcher, there are very few studies especially from 2019 upward that assessed the interplay between board risk management and financial distress worldwide. Few ones observed include; Beasley (2023) carried out a study titled; tempering financial reporting risk through board risk management of U.S. traded firms (2011-2014). Data for this study was obtained from 1000 firms through random sampling technique. Regression results indicate that there is a positive association between robust board risk management processes and two avenues for mitigating financial reporting risk. However, Sule and Meshack (2022) examined the effect of risk managements committee on the financial distress of listed industrial goods firms in Nigerian industrial (2011–2020). An ex-post facto research design was employed by the study. 10 industrial goods firms were finally selected as the sample for the study using a purposive sampling method. The regression results indicate that independence of risk management committee has no but insignificantly increases firm's financial distress likelihoods, while a higher number of female members in the risk management committee significantly reduce risk of financial distress. Therefore, it is important to highlight that there are very few studies especially from 2019 upward

that assessed the interplay between board risk management and financial distress worldwide. Though, this temporal gap during this critical period represents a substantial lacuna in contemporary governance literature.

### **2.3.3 Board Foreign Diversity and Financial Distress**

The empirical evidence on the effect of board foreign diversity on financial distress is limited. Notwithstanding, the one observed is; Al-Naim et al. (2025) examined the influence of foreign, busy board members, and gender diversity on firm bankruptcy among companies listed on the Saudi Stock Exchange from 2015 to 2023. The panel data sample for this study comprised 128 listed firms. The results show a positive and significant association between the percentage of female board members, board busyness, board independence, board size, and the Altman Z-score, indicating that larger boards with more female, busy, and independent members have a lower bankruptcy risk. Conversely, the percentage of non-Saudi board members is negatively associated with the Altman Z-score. Similarly, Eze and Akaegbobi (2023) studied corporate leadership diversity's impact on financial distress in Nigerian manufacturing firms (2011–2020). Using an ex-post facto design with 55 sampled firms, panel least square regression results indicate that foreign directors' diversity positively influences the Altman's Z-Score of quoted manufacturing firms.

Moreover, study conducted by Ali et al. (2022) centered on does board diversity reduce the probability of financial distress among Chinese firms listed on the Shanghai and Shenzhen Stock Exchange markets from 2010 to 2018. Sample of 12,366 observations from 1,374 firms were employed for the study. The findings of the study indicate that directors with different educational backgrounds, financial skills, and tenures can assist in reducing the probability of financial distress.

## **2.4 Theoretical Review**

The interplay between corporate governance mechanisms and financial distress has been extensively studied, with various theories proposed by researchers to explain this dynamic. The researcher therefore found agency and stakeholder theories to be relevant for this study.

### **2.4.1 Agency Theory**

According to Jensen and Meckling (1976) the agency relationship is seen in terms of a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf and which involves delegating some decision-making authority to the agent. The theory was developed to address these inherent tensions arising as a result of separation of ownership and operational control of the business between the principal and the agent. Based on agency theory, the connection between corporate governance mechanisms and financial distress can be explained through the lens of monitoring

effectiveness. The theory explains that effective governance mechanisms reduce agency problems through enhanced monitoring and transparency while aligning managerial incentives with shareholders' value maximization objectives, consequently mitigating the probability of decisions precipitate financial distress. Specifically, study by Khalil et al. (2024) reveals that board independence serves as a crucial monitoring mechanism to reduce agency problem that can lead to a firm's financial distress. Agency theory submits that the independence of directors provide objective oversight and reduce the likelihood of managerial opportunism.

Further, Yousaf et al. (2024) added that board risk management directly address the agency problem by ensuring that management's risk-taking behavior aligns with shareholders' interests. Agency theory suggests that managers may engage in excessive risk-taking when their compensation is not properly aligned with firm performance, potentially leading to

financial distress. Effective board-level risk oversight constrains such behavior and ensures risk management protocols are implemented. In addition, Eze and Akaegbobi (2023) highlights that foreign directors bring diverse expertise and market knowledge that can improve strategic decision-making and reduce the likelihood of management errors that lead to financial distress. This diversity enhances the board's monitoring capacity by providing varied viewpoints on strategic initiatives.

## **2.5 Research Framework**

The research framework provides a diagrammatic representation of relationships among the variables being investigated. Figure 1 presents the framework, which consists of a dependent variable—financial distress (measured using Grover's G-Score), three independent variables (board independence, board risk management and board foreign diversity), and four control variables (firm size, firm age, and liquidity).

**Figure 1.**

**Research Framework**

**Corporate Governance Mechanisms**

Board Independence

Board Risk Management

Board Foreign Diversity

**Financial Distress**

Financial Distress  
(Grover's G-Score Model)

**Control Variables:**  
Firm Size  
Firm Age  
Liquidity

*Source: Researcher's Concept (2025).*

Therefore, this study is grounded on agency theory, because the theory provides clearer theoretical framework for understanding how corporate governance mechanisms influence financial distress through the lens of monitoring effectiveness.

**3.0 Methodology**

This study employed a panel longitudinal research design because it repeatedly assesses participants over time to analyze changes and variable interactions (Keith, 2024). The population comprises all eighty (80) manufacturing firms listed on the Nigerian Exchange Group as at December 2024. A sample of forty (40) firms were drawn using a purposive approach focusing on firms that have complete annual reports and audited financial statements published on the Nigerian Stock Exchange from 2014 to

2024. This ensures data availability and company consistency in fulfilling public obligations. A STATA version 17.0 was employed to run the descriptive, correlation, regression estimations. The descriptive statistics captures the mean, median, standard deviation, minimum and maximum value of the data, while the correlation and regression shows the pattern and degree of influence between corporate governance mechanisms (board independence, board risk management and board foreign diversity) and financial distress. Additionally, some diagnostic tests (linearity, normality, heteroskedasticity, multicollinearity, and omitted variable test) and specification (fixed effect, random effect, hausman) tests were carried out to ensure fitness of the data and choose the best regression result. Financial distress was measured using the Grover's G-Score known for its

high predictive accuracy capacity in assessing financial distress, instead of the traditional models used in previous studies. According to Kembi et al. (2024), the G-Score achieves a 90.41% accuracy rate, outperforming Altman’s (88.84%), Zmijewski’s (82.80%), and Springate’s (77.51%). The G-Score model categorized firms as financially distressed ( $G \leq -0.02$ ), healthy ( $G \geq 0.01$ ), or in a gray area (between these limits). The board independence was measured by the proportion of non-executive directors to the total directors developed by (Jensen & Meckling, 1976), while the board risk management was measured by the ratio of non-executive directors to total directors in the risk management committee established by (Fama & Jensen, 1983). Lastly, the board foreign diversity was measured by the total number of foreign directors/total number of directors on the board developed by (Shrader et al., 1997; Carter et al., 2003). The model also used three (3) control variables namely; firm size (log of total assets), firm age (current

year – year of incorporation), and liquidity (current assets-inventory to current liabilities).

**4. Results and Discussions**

**4.1. Descriptive Analysis**

The various descriptive statistics summarizes the characteristics of the data including the observation, mean, median, standard deviation, minimum, and maximum values for each of the variables under study. The dependent variable is measured by Grover’s G-Score model (G-SCORE), while the independent variables are board independence (BI), board risk management (BRM), and board foreign diversity (BFD). Also, the control variables proxies include; firm size (FS), firm age (FA), and liquidity (LIQ). Additionally, the analysis presents that the data is complete and there is no missing value issue with the total firm-year observations equals four hundred and forty (440) of forty (40) firms for eleven (11) years period (2014-2024). Table 1. illustrates these:

**Table 1.**  
**Descriptive Statistics**

<b>Variable</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Obs</b>
<b>Financial Distress</b>	2.979	0.442	29.132	-70.742	354.059	440
<b>Board Independence</b>	0.650	0.667	0.127	0.250	0.917	440
<b>Board Risk Management</b>	0.339	0.000	0.428	0.000	1.000	440
<b>Board Foreign Diversity</b>	0.183	0.111	0.211	0.000	0.727	440
<b>Firm Size</b>	7.361	7.295	0.932	4.650	9.716	440
<b>Firm Age</b>	40.250	37.000	20.964	5.000	101.00	440
<b>Liquidity</b>	1.217	0.829	1.918	0.002	24.101	440

*Field Survey (2025)*

Table 1. shows that the GSCORE has a mean of 2.98 with the median being 0.04, standard deviation 29.13, minimum -70.74, and maximum being 354.06. The mean of 2.98 implies that on average, the sampled firms maintain a relatively healthy financial position above the distress threshold of -0.02. However, the high standard deviation (29.13) and wide range (minimum; -70.74, maximum; 354.06) demonstrate significant disparity in financial health across firms and time periods. Some firms experienced severe distress while others demonstrated exceptional financial strength. For the independent variables, BI presents a mean of 0.65 with the median being 0.67, standard deviation 0.13, minimum 0.25, and maximum being 0.92. The averages 65%, suggesting that approximately two-thirds of board members are non-executive directors. This closely aligns with the Nigerian Code of Corporate Governance recommendations. The relatively low standard deviation (0.13) indicates consistency in compliance across companies.

Further, BRM shows a mean (0.34) with the median (0.00), standard deviation (0.43), minimum (0.00), and maximum (1.00). The averages 34% with a median of zero, illustrating that many firms lack dedicated risk management committee with independent oversight. In addition, BFD presents a mean of 0.18 with the median being 0.11, standard deviation 0.21, minimum 0.00, and maximum being 0.73. The averages 18%, indicating limited international representation on

Nigerian manufacturing boards. The maximum of 73% demonstrates that some firms actively pursue global expertise, while many maintain entirely domestic boards (minimum: 0%).

While for the control variables, FS shows a mean of 7.36 with the median being 7.30, standard deviation 0.93, minimum 4.65, and maximum being 9.72. The low value of the standard deviation (0.93) validates accuracy of the mean score (7.36) suggesting that the sampled firms have an average firm size of (7.36) measured by log of total assets. Additionally, FA has a mean (40.25) with the median (37.00), standard deviation (20.96), minimum (5.00), and maximum (101.00). The mean 40.25 suggesting that the sampled firms have operated for 40 years on average. Lastly, LIQ shows an average (1.22) with the median (0.83), standard deviation (1.92), minimum (0.00), and maximum (24.10). This translates moderate liquidity (mean: 1.22, median: 0.83).

#### **4.2. Correlation**

The correlation matrix shows the interconnections among the variables being investigated. Particularly, the matrix demonstrates the relationship between dependent variable (GSCORE) and independent variables; board independence (BI), board risk management (BRM), and board foreign (BFD) diversity, and control variables; firm size, firm age, and liquidity. Table 2 shows this.

**Table 2.**

**Correlation Matrix**

Variable	1	2	3	4	5	6	7	VIF
<b>Financial Distress</b>	1.000							
<b>Board Independence</b>	0.047	1.000						1.11
<b>Board Risk Management</b>	0.155	0.084	1.000					1.15
<b>Board Foreign Diversity</b>	0.125	0.194	0.020	1.000				1.38
<b>Firm Size</b>	-0.059	0.263	0.080	0.425	1.000			1.42
<b>Firm Age</b>	-0.145	-0.041	0.287	0.263	0.153	1.000		1.25
<b>Liquidity</b>	0.039	-0.001	0.029	-0.104	-0.044	-0.080	1.000	1.02

*Field Survey (2025)*

The first column of the Table 2 shows a weak positive correlation value of 0.047 between board independence and G-Score, indicating minimal direct relationship between board independence and financial distress in bi-variate analysis. Simply having independent board members does not seem to directly affect a company's financial distress. In addition, a positive correlation (0.155) is shown between financial distress and board risk management, suggesting that firms with risk management committees has the lower chances of experiencing financial distress likelihoods. Conversely, a moderate positive correlation (0.125) between financial distress and board foreign diversity manifests, indicating foreign directors may contribute modestly against firm's financial distress.

The matrix also reveals a very weak negative relationship between financial distress and firm size with correlation (-0.059). This means that bigger firms are generally a bit more financially stable, but

the connection is not strong. Similarly, an inverse links was shown between financial distress and firm age with correlation value of -0.145. The negative correlation of -0.145 shows a weak inverse relationship, implying that older firms tend to experience less financial distress. Conversely, financial distress shows a positive association with liquidity (0.039). This positive correlation of 0.039 shows a very weak direct relationship, so firms with higher liquidity might experience a tiny bit more financial distress.

The second column exhibits a weak but positive association between board independence and board risk management (0.084). Similarly, a modest but meaningful positive links between board independence and board foreign diversity with correlation value of 0.194 was shown. Additionally, board independence illustrates a moderate positive relationship with firm size (0.263). Conversely, board independence reveals a very weak inverse

association with firm age (-0.041). Further, a negative correlation extremely close to zero between board independence and liquidity was shown (-0.001).

The third column reveals a weak positive links between board risk management and board foreign diversity with correlation value of 0.020. In addition, board risk management shows a weak positive correlation with firm size (0.080). Moreover, board risk management demonstrates a moderately positive association with firm age (0.287). Furthermore, a very weak positive extremely close to zero relationship between board risk management and liquidity (0.029) was shown. While the fourth column shows a moderately strong positive relationship between board foreign diversity and firm size (0.425). Similarly, board foreign diversity exhibits a positive moderate correlation value of 0.263 with firm age. However, a weak inverse correlation value of -0.104 was shown between board foreign diversity and liquidity.

The fifth column demonstrates a weak positive association (0.153) between firm size and firm age. Conversely, firm size shows a very weak inverse links (-0.104)

with liquidity. While the sixth column illustrates a very weak negative relationship (-0.080) between firm age and liquidity. Lastly, the correlation matrix reveals the bi-variate relationships among variables and confirms the absence of multicollinearity problem through Variance Inflation Factor (VIF) column as all the VIF values were greater than financial distress threshold -0.002.

### **4.3 Board Independence, Board Risk Management, Board Foreign Diversity and Financial Distress**

The pooled OLS result was chosen as specified by the Hausman (choosing between the fixed effect and random effect) and Poolability (choosing between the fixed effect and OLS) specification tests. The results reveal the extent of the relationship board independence (BI), board risk management (BRM), board foreign (BFD) diversity have on financial distress (GSCORE), as well as the pattern of the influence. The interplay in the model is controlled by firm size (FS), firm age (FA), and liquidity (LIQ). On the contrary, Table 3 presents the *coefficients* and alongside their *standard error (in brackets)*, for the regression estimates of the pooled OLS, fixed effects and random effects regression:

**Table 3:**

**Board Independence, Board Risk Management, Board Foreign Diversity and Financial Distress**

Variables	Pooled OLS*	Fixed Effect	Random Effect
<b>Board Independence (BI)</b>	1.628 (0.882)	4.5786 (0.724)	3.9754 (0.744)
<b>Board Risk Management (BRM)</b>	15.858 (0.000)***	-2.7599 (0.702)	4.2411 (0.438)
<b>Board Foreign Diversity (BFD)</b>	34.636 (0.000)***	15.1418 (0.354)	18.9642 (0.103)
<b>Firm Size (FS)</b>	-4.569 (0.005)***	-53.1608 (0.005)	-49.6390 (0.002)
<b>Firm Age (FA)</b>	-0.351 (0.000)	-0.2866 (0.815)	0.0399 (0.973)
<b>Liquidity</b>	0.476 (0.493)	-10.5113 (0.062)	-5.6487 (0.069)
<b>Specification Test:</b>			
Poolability (P.Value)	0.792		
Hausman			0.158
R-Square	0.114		
Adj. R-Square	0.102		
P.Value	0.000		
Obs	440	440	440

\*\*\*  $p < .01$

The pooled OLS model demonstrates reasonable explanatory power with an R-squared of 0.114 (11.4%), indicating that the corporate governance mechanisms and control variables collectively explain approximately 11% of the variance in financial distress among Nigerian manufacturing firms. The adjusted R-squared of 0.102 (10.2%) confirms the model's robustness after accounting for the number of predictors. The F-statistic is highly significant ( $p = 0.000$ ), validating that the model as a whole is statistically

significant and that at least some independent variables meaningfully predict financial distress.

Table 3 presents that board independence has coefficient of 1.628 with a p-value of 0.882, indicating a positive and statistically insignificant relationship between board independence and financial distress. The lack of significance implies that merely having independent directors on the board does not automatically translate to reduced financial distress in

Nigerian manufacturing firms. Given the result in Table 3 above, hypothesis ( $H_{01}$ ), which states that board independence has no significant effect on financial distress of manufacturing firms listed on the Nigerian Exchange Group was not rejected. Conversely, board risk management shows a coefficient of 15.858 with a highly significant p-value of 0.000. This suggests a strong positive and statistically significant association between board risk management and financial distress. Meaning that firms with dedicated risk management committees with independent oversight demonstrate substantially better financial positions. Considering the result in Table 3 above, hypothesis ( $H_{02}$ ), which states that board risk management has no significant effect on financial distress of manufacturing firms listed on the Nigerian Exchange Group was rejected.

Similarly, board foreign diversity exhibits coefficient of 34.636 with a highly significant p-value of 0.000, revealing a robust positive link between board foreign diversity and financial distress. This substantial coefficient suggests that having foreign directors on the board significantly mitigates a firm's financial distress likelihood. Corresponding to the result in Table 3 above, hypothesis ( $H_{03}$ ), which states that board foreign diversity has no significant effect on financial distress of manufacturing firms listed on the Nigerian Exchange Group was rejected. Considering this result foreign directors bring valuable international perspectives and expertise, their impact on

financial distress prevent sufficiently robust in the Nigerian manufacturing context to reach statistical significance.

For the control variables, firm size presents a coefficient of -4.569 with a highly significant p-value of 0.005, indicating an inverse but statistically significant association between firm size and financial distress. Meaning that larger firms experience significantly lower financial distress likelihood. Additionally, firm age shows a negative coefficient of -0.351 and a highly significant p-value of 0.000, suggesting that older firms experience significantly lower financial distress risk. This is in line with the traditional view that maturity brings stability. However, liquidity has a positive coefficient of 0.476 with an insignificant p-value of 0.493, indicating that liquidity does not significantly influence financial distress.

#### **4.4 Discussions**

The findings that board independence has no significant effect on financial distress aligns with several recent studies while contradicting others, showing context-dependent governance effectiveness. This result is in line with Binwai and Mustapha (2024), who found board independence had no significant effect on financial distress likelihood among Nigerian consumer goods firms, and Hassan et al. (2023), who reported negative but insignificant effects in Pakistani non-financial firms. Similarly, Humairoh and Nurulita (2022) found board independence did not affect financial

distress in Indonesian manufacturing companies. However, these findings contrast with studies reporting significant effects. Kamau et al. (2023) found statistically significant negative relationships between board independence and financial distress among Nairobi Securities Exchange firms, while Khan and Kong (2022) reported that board independence significantly reduced distress probability in UK-listed firms. Begum et al. (2023) similarly found significant effects in Bangladeshi pharmaceutical firms. However, this inconsistency may reflect fundamental differences between developed and emerging markets. In developed economies with strong institutional frameworks, independent directors can effectively challenge management due to established norms, legal protections, and market discipline. Conversely, in emerging markets like Nigeria, characterized by concentrated ownership, weak enforcement, and relationship-driven business cultures, nominal independence may not translate to functional independence. The Nigerian manufacturing context—characterized by family-controlled firms, weak regulatory enforcement, and limited director training—may constrain board independence's impact on financial distress prevention.

This study's finding that board risk management demonstrates a highly significant positive relationship with financial distress (coefficient = 15.858,  $p = 0.000$ ). This finding aligns with

stakeholder and resource dependence theories, which emphasize that boards must effectively handle both external and internal uncertainties that create financial distress risks. This robust relationship suggests that firms with more independent risk management committees experience substantially mitigated financial distress outcomes, confirming that dedicated board-level risk oversight is a critical governance mechanism for preventing financial distress. The finding partially contradicts with limited empirical evidence. Sule and Meshack (2022) investigated Nigerian industrial goods firms and similarly found that risk management committee independence had no significant effect on financial distress, though they found gender diversity within risk committees did matter. On a similar note, Beasley (2023) found positive associations between robust board risk management and reduced financial reporting risk in US firms, suggesting effectiveness depends on genuine integration rather than superficial compliance.

The additionally positive and statistically significant association between board foreign diversity and financial distress (coefficient = 34.636,  $p = 0.000$ ) represents the strongest governance effect observed in this study. This substantial coefficient suggests that foreign directors has meaningful contributions to mitigating firm's financial distress. This finding partially aligns with Eze and Akaegbobi (2023), who found that foreign director diversity positively influenced Altman's

Z-Score among Nigerian manufacturing firms, and Cho and Joo (2024), who reported that ethnic board diversity reduced bankruptcy risk in US manufacturing firms. Al-Naim et al. (2025) found mixed results in Saudi Arabia, where female and independent directors reduced bankruptcy risk while foreign directors showed negative associations with the Altman Z-score. Similarly, Ali et al. (2022) revealed that board diversity reduces financial distress likelihood among Chinese manufacturing firms. As Nigerian manufacturing firms increasingly pursue international expansion and face global competition, foreign directors may play a crucial role in mitigating firm's financial distress outcomes.

## 5. Conclusions and Recommendations

In accordance with the findings of this study, the paper concludes that board independence alone, does not significantly

influence financial distress likelihood in Nigerian manufacturing firms. However, it is concluded that board risk management and board foreign diversity represent the most crucial governance mechanisms for mitigating financial distress among Nigerian manufacturing firms. Drawing from these conclusions, it is recommended that manufacturing firms should establish mandatory independent risk management committees and pursue strategic board internationalization, as represent the most promising paths toward preventing financial distress and long-term sustainability. While the investors and financial analysts should incorporate governance-weighted investment frameworks. The regulatory bodies (SEC, NGX, FRCN) should mandate board-level risk management committees, create incentives for board internationalization, develop early warning systems and integrate governance into industrial policy.

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## THE CASH FLOW CONUNDRUM: EXPLOITING THE IMPACTS OF DELAYING ACCOUNTS PAYABLE ON SMES' FINANCIAL PERFORMANCE IN THE POST-COVID-19 PANDEMIC

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### Abstract

*The COVID-19 pandemic significantly disrupted global business operations, and Small and Medium Enterprises (SMEs) appeared among those that were seriously affected. Efforts to contain the virus, such as market closure and company shutdowns, led to drastic falls in revenue generation, thus weakening SMEs' working positions. Similarly, institutional credit lenders faced liquidity constraints that limited their ability to provide funds during and after the pandemic. Thus, this study investigates the impact of delaying accounts payable on SMEs' financial performance during the post-COVID-19 pandemic. The study used primary data and distributed 362 questionnaires on a four-point Likert scale to sample SMEs. To analyse data and test hypotheses, the study employs Pearson correlation and multiple regression analysis. Findings of the study reveal that delaying payment to suppliers does not statistically significantly influence SMEs' financial performance in the post-COVID-19 period. Conversely, delaying payment to credit lenders, delaying Salary and Wages, deferring tax, and Payment in Arrears significantly and positively impact SMEs' financial performance. In conclusion, the study recommends that deferral tactics can serve as a viable financial strategy for SMEs in the short run after a period of uncertainty and distress, such as pandemics, epidemics, depression, or other systemic disruptions.*

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**Keywords:** Financial performance, Deferred Tax, Payment in Arrears, COVID-19, Accounts Payable

### 1.1 Introduction

The negative consequences of the COVID-19 pandemic did not spare either human or economic activities, resulting in significant loss of lives and widespread disruption to global economic systems (WHO, 2020; Zeidy, 2020). The pandemic, caused by the Coronavirus (SARS-CoV-2) which originated in Wuhan, China, in the last quarter of 2019, spread rapidly across countries and continents, necessitating unprecedented

public health interventions (Xu & Abbasov, 2021).

In January 2020, the World Health Organization formally declared COVID-19 a global public health emergency, triggering the adoption of stringent containment measures such as lockdowns, social distancing, quarantines, and restrictions on movement worldwide. While these measures were primarily aimed at curbing the spread of the virus, they also generated severe economic

consequences, including disruptions to production, contraction in aggregate demand, and heightened volatility in global financial markets (Bello, 2022). Evidence suggests that the scale of these economic disruptions led many societies to perceive the pandemic as a greater threat to economic survival than to public health, with limited confidence in government-led economic mitigation measures during the crisis period (Bello, 2022).

These containment strategies, though medically necessary, opened a “tin of worms” that devastated virtually all sectors of the global economy, with Small and Medium-Sized Enterprises (SMEs) being particularly vulnerable due to their limited financial buffers, weak access to credit, and dependence on continuous cash flows (Susanty et al., 2022).

In Nigeria, the effect of COVID-19 was glaring in Kano State as a center of commerce, due to the strategies put in place to contain the spread of the virus. The mitigating effects to contain the spread of the virus affected SMEs' performances from different angles, including the closure of production sites, closure of markets, restriction on movement (transportation), hazardous working environment, and financial irregularities (Abdulrahman, 2023; Bartik et al, 2020).

Similarly, Tan et al (2020) argue that despite all of the above-mentioned factors, what is glaring is how the pandemic

incapacitated SMEs to the extent that they could not produce, distribute, and sell. The scenario called for business entities to re-strategize and look for ways internally to augment their working capital to maintain insolvency. Many studies (Sanjo, 2020; Pramuka et al, 2022; Nurudeen, 2022; Abdulrahman, 2023b) indicated that SMEs can address their liquidity and insolvency problems using bootstrapping techniques during the pandemic and foster their financial performance. The use of this bootstrapping technique after covid COVID-19 pandemic will enhance liquidity and solvency, and the cash flow of these enterprises will positively witness a steady increase, which will affect the SMEs' financial performance.

During the incidence, Kano State, as a center of commerce with more than 2,441 Small and medium-scale registered business enterprises (NBS, 2021), witnessed poor performance as a result of the strategies put in place to curb the spread of the COVID-19 virus. The performance of these SMEs during post pandemic strategically depends on how best they utilize their internally generated sources of revenue to supplement external revenues that are not forthcoming due to the vagaries of the pandemic. This renders many SMEs unable to settle their financial obligations even after the pandemic.

Sustainable economic development in developing economies such as Nigeria is closely linked to the performance of indigenous micro, small, and medium-scale enterprises (MSMEs). These

enterprises are widely recognised as critical drivers of economic growth due to their substantial contributions to employment generation, poverty alleviation, export earnings, and gross domestic product. Empirical evidence from Nigeria further underscores that the effectiveness of MSMEs in fulfilling these roles is strongly influenced by their market orientation and ability to adapt to environmental dynamism, which directly shapes their financial performance and long-term sustainability (Suleiman et al., 2021).

Globally, small and medium-scale enterprises account for more than 60% of employment opportunities, contribute about 40% of GDP, and represent nearly 90% of businesses worldwide (World Bank, 2019). However, recent studies indicate that these contributions have been significantly undermined, as many SMEs increasingly struggle to remain financially viable (Adian et al., 2020). The COVID-19 pandemic further exacerbated these challenges, with widespread market closures leading to sharp declines in revenue, erosion of working capital, and weakened returns for many SMEs. These adverse effects persisted even beyond the pandemic period, as several mitigating strategies proved unsustainable in the post-COVID-19 economic environment

A Plethora of studies suggested that different bootstrapping techniques were used in the pre- and post-pandemic periods as a source of internal funding. These include retained earnings,

Minimization of accounts receivable, Lease/Hire purchase, Trade credit, Owner personal financing, and inventory reduction (Abdulrahman, 2023b; Anorue & Ugwoke, 2022; Yusuf et al., 2020; Block et al., 2022). However, after the pandemic, the financial performance of SMEs continues to lag due to the economic recession caused by the pandemic, which continues to affect their financial performance. To augment the financial irregularities caused by the pandemic, small and large businesses look for easy and accessible ways to generate revenue internally without resorting to external loans from financial institutions that were devastated by the strategies to contain the spread of the virus. Despite various bootstrapping techniques being put into use to provide alternatives to external funding, however, empirical studies are limited in examining the impact of delaying accounts payable on SMEs' financial performance during Post post-COVID-19 pandemic in the study area, and this creates a gap that requires urgent attention to bridge. Therefore, the objective of the study is to examine the influence of delaying accounts payable on SMEs' financial performance during the post-COVID-19 pandemic in Kano state.

## **2.0 Literature Review and Hypothesis Formulation**

### **2.1 SMEs Financial Performance**

Small and medium-scale enterprises, commonly referred to as SMEs, do not have a universally accepted definition (Amuda, 2020). However, within the Nigerian context, the Central Bank of

Nigeria (CBN) defines SMEs as entities with an asset base ranging from ₦5 million to ₦300 million, excluding land and buildings. These enterprises must also employ no more than 300 individuals and should have an annual turnover of at least ₦100 million (Banji, 2020).

Despite the challenges faced by SMEs, several researchers, including Abdulrahman (2021) and Bloom et al. (2020), emphasize their critical role in economic development. For instance, Zeidy (2020) and Abdulrahman (2021) note that SMEs are vital for driving economic growth, contributing to the Gross Domestic Product (GDP), creating job opportunities, and delivering goods and services that meet societal demands.

The financial performance of small and medium-sized enterprises (SMEs) encompasses various metrics that evaluate their overall health and profitability (Ubiomoh, 2017; Mahmudov, 2018). Financial performance could be assessed according to some studies (Nurudden, 2022; Abdulrahman, 2021), including revenue growth, profit margins, liquidity, solvency, sales growth, and maximizing the shareholders' values. However, to determine financial performance, certain indicators or ratios are used according to Nwanyanwu (2013), Hovarth (2018), Abdulrahman (2021), and Abdulrahman (2023). These include liquidity, return on assets (ROA) and return on equity (ROE), gross profit margin (GPM), and Net profit margin (NPM). Analyzing these metrics offers

valuable insights into an SME's financial stability, growth potential, and operational efficiency.

However, there is considerable debate regarding the most effective measures or indicators for assessing the financial performance of SMEs. Sanni (2009) and Airout et al. (2023) highlight a range of financial performance measures that vary under different conditions. These measures include Liquidity Sales Growth, Gross Profit Margin, Net Interest Margin (NIM), Return on Equity (ROE), and Return on Assets (ROA). These indicators are widely employed in the literature to assess financial performance. Thus, the current study similarly considered the same as indicators of financial performance.

### ***2.3 Delaying Accounts Payable and SMEs' Financial Performance***

During Covid 19 pandemic, SMEs were constrained financially, and this called for the use of the bootstrapping method as an internally driven technique to raise funds, especially when banks cannot exercise their traditional role due to the pandemic (Abdulrahman, 2024). Bootstrapping technique, as a technique of raising funds internally, includes: owner-related financing, delaying payment, minimizing accounts receivable, lease/ hire purchase, and inventory reduction (Black, Fisch, & Hirschmann, 2022; Abdulrahman, 2023b; Kibina & Madishetti, 2013).

For instance, if credit payment is extended will provide additional funds to the

business as short-term borrowing from the supplier (Lawrence, 2006) that will enhance the liquidity of the firm. Added to this, Nurrudden (2022) argues that the strategy gives small business owners the advantage of having cash available to inject into the business and at the same time cross carpeting bureaucratic bottleneck of getting funds from outside. However, care must be taken so that the entrepreneur's good reputation will not be eroded due to nonpayment of obligations as agreed. It should be noted that delaying payment can tarnish the goodwill and reputation of the business in the eyes of its suppliers and creditors (Nurrudden, 2022).

Delaying payment, as argued by Zwane and Nyide (2016), takes the form of extending the payment period to a later date as opposed to the earlier period agreed by the parties. Researchers, including Zwane and Nyide (2016), Abdulrahaman (2021), and Muo, Oladimeji, and Okunbanjo (2020), forwarded that Delaying Account Payables includes: Delaying payment to suppliers (DPS), delaying payment to credit lenders (DPCL), delaying salary and wages (DSW), deferring tax (DT), and Payment in arrears (PA). These strategies, according to Zwane and Nyide (2016), Abdulrahaman (2021), and Muo, Oladimeji, and Okunbanjo (2020) will provide the businesses with working capital that will enhance their financial performance.

### ***2.3.1 Delaying Payment to Suppliers and SME Financial Performance***

Refers to deferring payment to suppliers of trade credit against the period during which the payment is scheduled to be paid. Most transactions conducted nowadays, especially by SMEs, are based on trade credit with little emphasis on cash transactions (Abdulrahaman, 2023b). The Advantage here is that purchasers of goods and services are not expected to make prompt cash payments until the agreed date. However, payment to suppliers can be delayed, or a request for an extension can be made, especially when the business is not liquid enough, or payment of such trade credit will lead to liquidity problems. The time gap between purchase and when payment will be made will help the business to maintain its liquidity, but at the expense of the supplier. It should be noted that delaying payment to suppliers can create a bad image and disrupt the goodwill that the business has enjoyed for a long time (Nurrudden, 2022).

To find out how often SMEs delay payment to creditors and suppliers, a study was conducted by Zwane and Iyade (2016) on financial bootstrapping and the small business sector in a developing economy. Results from the study using descriptive analysis indicated that 81.7% of small businesses in the study area (eThekweni Municipality) paid obligations within 30 days, indicating that the SMEs are not using delaying payment to bootstrap their finance.

Similarly, to determine the relationship between financial bootstrapping and organizational performance in Oyo State, Nurudden (2022) used a structured questionnaire on one hundred and eighty respondents among the SME owners in the study area. Using the Pearson Product-Moment Correlation Coefficient (r), the result of the study shows a correlation coefficient of .810 at a 95% confidence level between delaying payment and SME performance, indicating a significant and positive relationship between the two variables.

Furthermore, Al-alawi (2021) investigated the effect of delaying payment on the productivity of Small and Medium Construction Companies in Oman. Using the questionnaire method, the results of the study indicated that delay in payment significantly affects the financial stability of the sampled companies. Likewise, Ansah (2011) examines the causes and effects of delaying payments by clients on construction projects in Ghana. The study distributed 210 questionnaires to 210 respondents, and using a relative importance index, the study results showed that withholding or delaying payments created financial difficulties for the sampled companies.

In another study, Ye (2020), Muo, Oladimeji, and Okunbadejo (2020) in their study on Financial bootstrapping and Small business growth in Lagos metropolis, Nigeria. Using regression analysis, the findings of the study indicated that owner-related finance and

delaying payment to suppliers have no significant influence on SME growth in the study area at a 95% confidence level.

Similarly, Nicholos and Stephen (2025) in their study opine that measures affecting delaying payment among others include a lack of proper payment processes and bureaucratic bottlenecks, and a poor internal control system. The study findings further indicated that delayed payment on SMEs leads to poor cash flow management, affects the long-term sustainability of the business, and affects the goodwill of the business. Delaying payment to suppliers, as observed from previous research findings, ensures liquidity at the expense of goodwill. However, if well managed, it influences financial performance. Based on the above empirical evidence, the study set the following hypothesis.

H<sub>a1</sub> Delaying payment to suppliers influences SMEs' Financial Performance in the Post-COVID-19 pandemic.

### ***2.3.2 Delaying payment to Credit lenders and SME Financial Performance***

Delaying Payment to local and institutional credit lenders is used as a strategy to ensure liquidity among SMEs. However, such a delay attracts penalties such as an increase in interest rate, especially when the interest rate is compound interest. Similarly, failure to pay back the accumulated interest and the

principal amount will lead to a court injunction. Furthermore, cases of lack of payment are rampant among SMEs, especially when the businesses are facing economic misfortunes.

From the study conducted by Mose and Miroga (2025) on Pending bills practices and the financial performance of small and medium enterprises, it was indicated that delayed payment and inconsistent billing cycles significantly disrupt SMEs' financial performance. However, from the perspective of the SMEs, delaying payment might serve as a strategy to improve financial performance at least in the short run. Since this tactic was mostly employed by SMEs to mitigate financial difficulty during the COVID-19 pandemic, perhaps due to insufficient cash inflow, the current study argues that such delays in payment to credit lenders might boost financial performance. Based on this logical argument, the study set the following hypothesis:

H<sub>a2</sub> Delaying payment to Credit Lenders Influences SMEs' Financial Performance in the Post-COVID-19 pandemic.

### ***2.3.3 Delaying salary and wages and SME Financial Performance***

Remuneration of workers is considered an entitlement for the sweat of the labor they exerted in the economic process. However, delaying payment of salaries and wages could be used as a strategy to

veil SMEs from the financial crunch that they are facing.

However, it should be noted that the techniques could be devastating, especially when they are not managed well, because they can lead to the destruction of goodwill that SMEs enjoy from their suppliers and credit lenders. Similarly, delaying payment to employees (salary and Wages) is also put into practice by some organizations to maintain liquidity (Muo, Oladimeji, and Okunbanjo, 2020, citing Bonginkosi and Celani, 2016) with repercussions. During the COVID-19 pandemic in Nigeria, many SMEs delayed paying salaries, some made half payments, and a substantial number of SMEs and other organizations waited for government palliative measures (Abdulrahman, 2023a). Those who could not fix themselves into any of the above ended up laying off the workers temporarily or retrenching them permanently. This situation continues even after the COVID-19 pandemic, likely because businesses feel it is a discovered strategy that might help boost business liquidity in the short run.

Meanwhile, empirical studies across the globe prove mixed reactions to the influence of delayed salaries and wages on financial performance. For instance, Sunoma et al (2021) investigated the effects of irregular payments of emoluments on the performance of non-academic staff in tertiary institutions. The study administered 282 questionnaires,

and using regression analysis, the findings of the study indicated that delay in payment of salary, pay cuts, and delay in payment of promotion benefits have significant effects on staff performance. Similarly, Nkwasiwe, Katsigaire, and Tobias (2023) in their study on Accounts payable and financial performance of manufacturing firms use Linear Regression Analysis on data collected from the sampled firms. The study results indicated a significant positive relationship between accounts payable management and financial performance.

Additionally, Abdulrahman, Dasuki, and Ado (2024) conducted a study on financial incentives and academic staff performance. Using multiple regression analysis on the data obtained from the respondents of the study. The findings of the study indicated that prompt payment of salaries/wages positively influences performance. The study further revealed that delay and late payment of salary/wages negatively affected academic staff performance. Based on the above empirical evidence, the study set the following hypothesis.

H<sub>a3</sub> Delaying Salary and Wages Influences SMEs' Financial Performance in the Post-COVID-19 pandemic.

#### ***2.3.4 Deferral of Tax and SME Financial Performance***

Most business entities defer tax payments to tax authorities not just because they want to ignore payment, but because they

want the money to augment their capital base. Tax negates a substantial part of the business profit, which could be used to plough back into the business as additional capital that does not have any bearing. Nevertheless, to the tax authority, the deferral of tax affects revenue generation of that period, and the consequence will be on the provision of social amenities such as electricity, security, and good roads.

Similarly, Sabina and Ohimere (2023) examined the implications of deferred tax assets on the performance of the commercial banks in Niger. Using an Ex-post factor research design, the study collected secondary data from the selected banks for the period between 2012 to 2021. The results of the study revealed that deferred tax has a positive and significant impact on the performance of the banks under the study.

Furthermore, Nurdayadi (2019) conducted a study on the impact of deferred tax and tax planning on earnings management and profitability. Using path regression, the findings of the study indicated that deferred tax expenses have a significant influence on earnings management, with no influence on a company's profitability.

Another study conducted by Aondoemba, Chidozien, and Oti (2021) on Corporate tax mix and Financial performance of manufacturing Firms in Nigeria, uses secondary data from 10 listed manufacturing companies from 2014 to 2018. The study results indicated

that tax mix has a positive and insignificant effect on the net income of the listed companies under the study. However, deferred tax was found to have a negative and insignificant effect on the income of the studied manufacturing firms. Based on the above empirical pieces of evidence, the study set the following hypothesis

- H<sub>a4</sub> Deferral of Tax Influences SMEs' Financial Performance in the Post-COVID-19 pandemic.

### ***2.3.5 Payment in Arrears and SME Financial Performance***

Payment in arrears, such as that of electricity bills and water rates, constitutes another form of delaying payment, which allows SMEs to take care of some of their insolvency problems. Although empirical studies on utilities and sectoral analysis strongly cautioned against using non-payment or delaying payment as a liquidity tactic, arguing that it may likely harm financial performance (Ajobola, Sodeinde, & Aderemi, 2022). However, other studies maintain a different view, reiterating that this type of payment does not have a negative effect, looking at the provisions of the mode of payment, and this allows SMEs to enjoy services, which will be provided later. For example, according to Lefebvre (2023), in his study on Trade credit, Payment duration, and SMEs growth in the European Union mentioned that in commercial trade relationships, deliberately extending payment terms or longer payment

duration under certain conditions is associated with higher sales, faster growth, or even higher short-run profitability. This is because the cash freed is reinvested into sales or working capital, thereby improving financial performance.

To examine the relationship between payment delays and SME performance, various studies worldwide were conducted. Zwane and Iyade (2016) conducted a study and opined that deferment of value-added tax increases SMEs' liquidity, especially when invoice payment is used rather than cash payment. The period between when invoices are issued to the period when payment will be made creates a window for SMEs to maintain liquidity.

However, Hovarth (2019), citing Ebben (2009), found that there is a negative relationship between return on sales (ROS)/return on assets (ROA) ratios and payment delays and customer-related techniques. In a different study, Jones and Jayawarna (2010), as cited in Hovarth (2019), found that a positive relationship exists between payment-related and joint-utilization methods and both turnover change and sales growth.

In addition, Ye (2020) found a significant negative relationship between bootstrapping and startup ventures in terms of profitability using longitudinal panel data from the Kauffman Firm Survey throughout 2005-2007. The study's findings show that the

bootstrapping approach (delaying payment to suppliers) is significantly and strongly, but negatively, associated with profitability. Based on the above empirical evidence, the study set the following hypothesis

**H<sub>a5</sub>** Payment in Arrears Influences SMEs' Financial Performance in the Post-COVID-19 pandemic.

From the above literature evidence, the study's conceptual framework was

developed (see Figure 1), proposing a direct and positive impact of delaying accounts payable on SMEs' Financial Performance. The framework shows five proposed direct impacts of Delaying Payment to Suppliers, Delaying Payment to Credit Lenders, Delaying Salary and Wages, deferring tax, and Payment in Arrears on SMEs' Financial Performance. Similarly, the regression path of this projected impact is presented in equation 1.

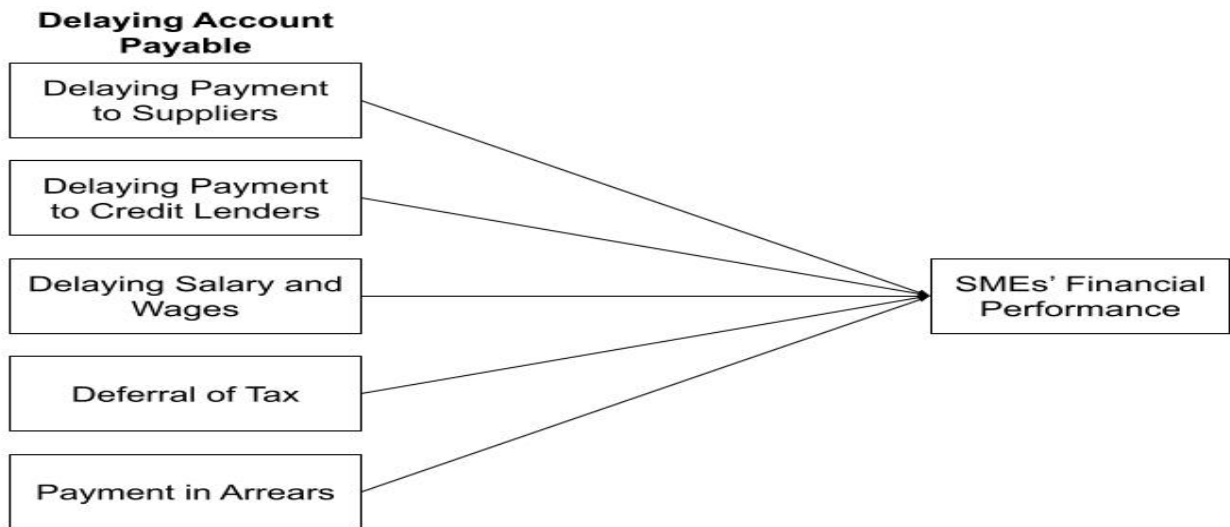


Figure 1 Delaying Accounts Payable and SMEs' Financial Performance

### 3.0 Methodology

The research design is descriptive (looking for the causal relationship between Delaying Accounts Payable and SMEs' Financial Performance) using empirical evidence. The population of the study includes all the registered 2,441 Small & Medium Enterprises (SMEs) in Kano State, according to the National Bureau of Statistics (2021). The study

used owners/managers of these SMEs as study respondents and located them using their business addresses. The study uses Kredjcie and Morgan's (1970) sample size table to select 331 samples that would represent the respondents; however, the study increased the sample size to 362 respondents to avoid attrition that may harm validity and cause bias. Similarly, the study used a simple random

probability sampling technique to give each SME an equal chance of representation in the study, which is in line with the study conducted by Abdulrahaman (2021). Structured questionnaires are used as an instrument of data collection using four Likert rating scales, which were distributed to the study respondents.

To ensure the accuracy and validity of the study’s instrument, the questionnaire is tested using validity and reliability measures. In measuring the validity of the instrument, the study employs face validity, and the responses from professionals and academics ascertain that the instrument is valid, as it covers all aspects of the topic that it is designed to measure. The study also employed the test

and retest method to ensure the reliability of the instrument over time, as opined by Mubaraka (2013).

**Diagnostic Test**

To check if data is normally distributed, the study employed preliminary analysis using Kurtosis and Skewness, and the values of both are closer to 0 and greater than 0.00001(see Table 4.2) as suggested by Field (2015). Added to this, Figures 2 and 3 also indicate that it is normally distributed with a normal distribution maintaining a bell-shaped curve. Similarly, to check if multicollinearity exists, Table 4.4 indicates that both the Tolerance and VIF are within the acceptable region as suggested by Mubaraka (2013).

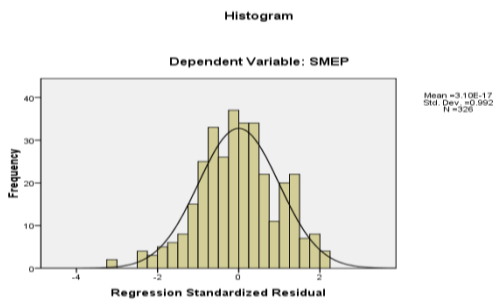


Figure 2 Normality Check

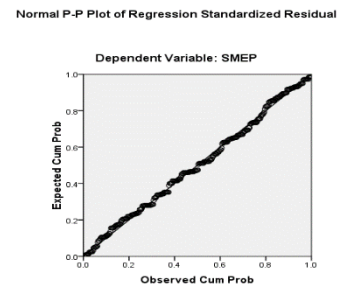


Figure 3 Linearity Check

The model of this study is specified in equation one as follows:

$$Y = \beta + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \dots\dots 1$$

Where;

- $\beta$  = The slope of the regression line
- $X_1$  = DPS = Delaying Payment to Trade Suppliers
- $X_2$  = DPCS = Delaying Payment to Credit Suppliers
- $X_3$  = DSW = Delaying Salary and Wages
- $X_4$  = DT = Deferral Tax
- $X_5$  = PA = Payment in Arrears
- $\epsilon$  = Error term
- $Y$  = SMEs’ Financial Performance

**Measurement of the Study Variables**

In measuring the study variables, Delaying Accounts Payable is measured using the following constructs: Delaying Payment to trade Suppliers, Delaying payment to Credit Suppliers, Delaying salary and wages, Deferral tax, and Payment in Arrears as found in the studies conducted by Sanjo (2020), Abdulrahaman (2023b), Zwane and Nyide (2016) with six items each using four Likert scale. SMEs' Financial performance is measured by Liquidity, and Sales growth, with five, and seven

items, respectively, using four Likert scale based on the studies conducted by Abdulrahaman (2021), Amuda (2020), and Zeidy (2020).

**4.0 Data Presentation, Results, and Discussions**

**4.1 Descriptive Statistics of Questionnaire Response Rate**

The researchers distributed 362 questionnaires to respondents from the target population in the study area, and the response rate is given below in Table 4.1.

**Table 4.1 Response Rate**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Responded	350	96.5
Not Responded	12	3.0
<b>Total</b>	<b>362</b>	<b>100</b>

**Source: Primary Data**

The descriptive statistics in Table 4.1 present the response rate for the questionnaires distributed. Of the 362 respondents, 350 returned their completed questionnaires, resulting in a response rate of 96.5%. This means that only 12

respondents did not submit or did not fully fill out the questionnaire. According to Mugenda and Mugenda (1999), a response rate exceeding 80% is considered excellent for ensuring adequate representation in analysis and reporting

#### **4.2 Descriptive Statistics of the Study Respondents**

Table 4. 2: Descriptive Statistics of the Study Respondents

Variables	Number of Responses	Percentage
<b>Gender</b>		
Male	300	86.0
Female	50	14.0
Total	350	100.0
<b>Marital Status</b>		
Married	308	88.0
Single	42	12.0
Total	350	100.0
<b>Number of Years in Business</b>		
1 – 5	4	1.0
6 – 10	44	9.0
11 – 15	266	76.0
16 <	47	13.0
Total	350	100.0
<b>Educational Qualification</b>		
Primary	30	8.5
Secondary	75	21.4
NCE/Diploma	87	25.0
HND/Degree	120	34.3
Postgraduate	38	10.8
Total	350	100.0
<b>Capital Base</b>		
Less than 50 million	15	4.3
50 million – 100million	205	58.5
101million – 150million	94	26.9
151 million and Above	36	10.4
Total	350	100.0
<b>Type of Business</b>		
Production	188	53.7
Service	108	30.9
Merchandising	54	15.4
Total	350	100.0

The respondents' profiles indicated (Table 4. 2) that the majority of the respondents are male (300, 83%) and married (308, 85%). Similarly, the majority of the respondents have business experience between 11 – 15 years (266, 76%). Concerning the educational level of the

respondents, 34.3% equivalent to 120, have either a higher national diploma or a degree, with very few attending primary education (8.5%). Furthermore, the majority of the respondents have a capital base between 50 million and 100 million (205, 58.5%), while only 4% of the

businesses participating in this study have less than N 50 million as a capital base. Table 4.2 further indicated that the

majority of the respondents (188; 53.7%) are in the production business, with 15.4% engaging in merchandising.

### 4.3 Descriptive Statistics of the Study Variables

**TABLE 4.3 Descriptive Statistics of the Study Variables**

	DPS	DPCL	DSW	DT	PA	SMEF
<b>Mean</b>	4.0644	3.8221	4.0153	3.8466	4.0245	
<b>Std Dev</b>	.87994	.86945	.82820	.84185	.94755	
<b>Skewness</b>	-.726	-.749	-.846	-.419	-.901	
<b>Kurtosis</b>	-.017	.591	.677	-.184	.391	
<b>Minimum</b>	1.00	1.00	1.00	1.00	1.00	
<b>Maximum</b>	5.00	5.00	5.00	5.00	5.00	

Source: SPSS

The descriptive statistics of the study variables are provided in Table 4.3. The analysis was conducted using SPSS (version 21) software. The mean values range from the highest of 4.0644 for "DPS" to the lowest of 3.8221 for "DPCL". The standard deviation values are 0.94755 for "PA" and 0.82820 for "DSW". These results suggest a good understanding among the respondents, as the variability of the data is closer to the mean, according to the classification by Field (2015). The high mean values and relatively low standard deviations indicate that the respondents had a solid grasp of the factors, concepts, and variables included in the questionnaire. This suggests that the survey instrument was effective in capturing the intended information and that the respondents were

able to provide reliable responses. The low variability in the data, as indicated by the standard deviation values, further reinforces the consistency of the respondents' understanding. This is a positive sign, as it suggests that the survey results are likely to be representative of the target population and can be used to draw meaningful conclusions.

Overall, the descriptive statistics presented in Table 4.3 provide a solid foundation for the subsequent analysis and interpretation of the study findings. The high mean values and low standard deviations indicate that the respondents were well-informed about the factors, concepts, and variables under investigation, which enhances the validity and reliability of the study.

To test if the data is normally distributed of the study instrument, Skewness and Kurtosis, as shown in Table 4.2, and Figure 1 are used. All the values fall within the acceptable range of -1 to +1, indicating a normal distribution. The skewness values range from -.901 to -.419, suggesting a symmetrical

distribution, as argued by Singh (2021). The data was further analyzed to determine the central tendency and dispersion measures. The mean score for the study instrument was 3.94, with a standard deviation of 0.885. This indicates that the responses tended to cluster around the mean, with a moderate level of variability.

#### 4.4 Pearson Product-Moment Linear Correlation

**Table 4.4 Correlation Table**

	DPS	DPCL	DSW	DT	PA	SMEs' FP
DPS	1					
DPCL	.413**	1				
DSW	.358**	.508**	1			
DT	.383*	.438**	.431**	1		
PA	.456**	.289**	.345**	.375**	1	
SMEFP	.369**	.362**	.250**	.552**	.426**	1

\*\**. Correlation is significant at the 0.01 level (2-tailed).*

To look at the relationship between the study variables, Table 4.4 provides coefficients that signify the kind of relationship that exists among the variables. Similarly, the coefficient is used to determine if multicollinearity exists among the study variables, as opined by (Mubaraka, 2013; Singh, 2019; Field, 2006). The coefficients from Table 4.3 are all positive and significant; for instance, the relationship between DPS and SMEs' financial performance is positive and significant with  $r = .369$  at a 99% confidence level. Furthermore, the

relationship between the DPCL, DSW, and SMEFP is positive with a correlation coefficient of .362 and .250, respectively. However, the relationship between Deferred Tax and SMEs' Financial performance is .552, while Payment in Arrears, and SMEs' FP is .426 at a 95% confidence level. Similarly, the Variance Inflationary Factor (VIF) in Table 4.5 explained that all the VIF coefficients fall within the accepted region.

**4.5 Multiple Regression Result**

To test whether the research model fits the study, the results from Table 4.5 are presented. The **T stat.** (2.671) and **Sig.** (0.008) indicated that the model is good enough to measure the influence of delaying accounts payable on SME Financial performance. Similarly, Table 4.5 provides a summary of the statistics of

the multiple regression analysis with an **r-value** of .619, indicating a simple linear relationship between the SMEs' Financial performance (dependent) and delaying account payables (independent variables). This means the two variables are related to one another with a correlation coefficient of 61.9%.

**Table 4.5 Multiple Regression**

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Tolerance	VIF
	B	Std. Error	Beta				
Constant	0.708	.265		2.671	.008		
DPS		.057	.088	1.655	.097	.685	1.459
DPCL		.059	.130	2.382	.018	.647	1.545
DSW	-	.061	-.108	-2.004	.046	.663	1.509
DT		.059	.423	8.026	.000	.694	1.441
PA	.226	.051	.227	4.417	.000	.729	1.372
<b>Model</b>			<b>1</b>				
<b>R</b>			<b>.619<sup>a</sup></b>				
<b>R<sup>2</sup></b>			<b>.383</b>				
<b>Adj R<sup>2</sup></b>			<b>.374</b>				
<b>Std. Error of the Estimate</b>			<b>.747</b>				
<b>R<sup>2</sup> Change</b>			<b>.383</b>				
<b>F Change</b>			<b>39.755</b>				
<b>df1</b>			<b>5</b>				
<b>df2</b>			<b>320</b>				
<b>Model</b>			<b>1</b>				
<b>Sig. F Change</b>			<b>0.000</b>				
<b>Durbin</b>			<b>1.637</b>				

$$\text{SMES Financial Performance} = 0.460 + .264X_1 + .325X_2 + .131X_3 + .138X_4 + \varepsilon$$

The R-squared ( $r^2$ ) value, with a coefficient of .383, measured the proportion which the dependent variable (SME financial performance) that was captured and explained by the independent variable, meaning that 38.3%

of SME financial performance was captured, and 68.1% remained unexplained by the independent variable. Looking at the adjusted  $r^2$  with a coefficient of .374 indicated the power of the predictor variable to predict the

outcome of the dependent variable. Similarly, the adjusted  $R^2$  value of .374 indicated predictive power that 37.4% of the dependent variable could be predicted if additional variables were introduced. Furthermore, to check if multicollinearity and linearity problems existed, the values from Tolerance and Variance Inflation Factors fall within the accepted region as indicated in Table 4.5, going by the suggestion of Field (2015).

#### **4.6 Results and Discussions**

It should be noted that up till September 2025, there is no official declaration that the pandemic has come to an end, as monitored by the officials of the World Health Organisation as well as local health authorities. However, it is pertinent to mention that all strategies put in place to contain the spread of the virus were relaxed. Yet, the SMEs' financial performance is still facing a precarious situation of insolvency and liquidity problems. In the post-COVID-19 pandemic, global economic sector indicators, to some extent, continue to show sluggish movement, indicating that it will take some time before business operations and other economic activities will fully return to normal. For instance, some factories and markets are still affected by the aftermath of the pandemic, and banks have restructured stringent ways of funding strategies, making it difficult to provide funds to SMEs. Based on this background, the following discussions are raised to highlight the significance of delaying payment as a bootstrapping strategy to boost SMEs'

financial performance in the post-COVID-19 pandemic period, as indicated in Table 4.5.

Hypothesis one in this study states that delaying Payment to suppliers influences SMEs' Financial Performance in the post-COVID-19 pandemic. Result from Table 4.5 ( $\alpha = 0.05$ ,  $\beta = 0.08$ , sig. 0.097) indicated that sig. value (0.097) is statistically larger when compared with  $\alpha = 0.05$ . With this result, the study hypothesis is rejected in favour of the null hypothesis that delaying payment to suppliers did not influence the SMEs' financial performance in the study area. Similarly, the beta coefficient (0.08) result indicated that a unit change in DPS will influence SMEs' financial performance by 8%, which is very insignificant.

In discussing the result of hypothesis one, which states that Delaying Payment to suppliers did not influence SMEs' Financial Performance in the post-COVID-19 period in the study area. Previous results support the study finding, for instance, Muo et al. (2020); Ansah (2011) from their study findings indicated that delaying payment to suppliers has no significant influence on SMEs' Financial Performance. However, Nuradden (2022); Zwane and Iyade (2016) found a positive and significant correlation between delaying payment to suppliers and SMEs' Financial Performance. The study observes that credit payment is considered vital to lubricate the liquidity position of SMEs, and this makes trade creditors to accelerate efforts and recover their credit.

Those credits that could not be paid are tied with heavy interest, which can force the debtor to make payment or bear the burden of paying an extra amount.

Hypothesis two in this study states that delaying Payment to Credit Lenders Influences SMEs' Financial Performance in the post-COVID-19 pandemic. Result from Table 4.5 ( $\alpha = 0.05$ ,  $\beta = 0.130$ , sig. 0.018) indicated that  $\alpha = 0.05$  is statistically greater than sig. value (0.18) at a 5% confidence level, meaning that the hypothesis is accepted. With this result, Delaying Payment to Credit Lenders positively influences SMEs' financial performance in the study area during the post-COVID-19 Pandemic. The result further indicated that a unit increase in delaying payment to credit lenders will positively influence SMEs' performance by 13%. This finding was not consistent with what is obtainable from the study conducted by Mose and Miroga (2025) that delayed payment and inconsistent billing cycles significantly disrupt SMEs' financial performance

In discussing hypothesis two, results indicated a significant influence of delaying payment to credit lenders and SMEs' Financial Performance. This result indicates that delaying payment to credit lenders can improve the financial performance of SMEs. Though contrary to previous positions, such as that of Mose and Miroga (2025), who argued that delayed payment and inconsistent billing cycles significantly disrupt SMEs' financial performance. The result of the

study implies that in post covid 19 pandemic period, SMEs in the study area used delaying payment to credit lenders as a resort to enhance their financial position. Most of the SMEs preferred to pay interest on overdue loans rather than to repay the total loan. Some of the reasons given is that paying the interest will allow them to keep on utilizing the funds. This is opposed to a situation where they should go and start looking for a fresh loan when it will not come forth.

Hypothesis three of this study states that delaying Salaries and Wages Influences SMEs' Financial Performance in the post-COVID-19 pandemic.

Looking at the result from Table 4.5 ( $\alpha = 0.05$ ,  $\beta = 0.108$ , sig. = 0.046) indicates that  $\alpha = 0.05$  is statistically greater than sig. value (0.046) at 5% confidence level, meaning that the hypothesis is accepted. Going by this result, delaying salaries and wages influences SMEs' performance in the study area. Similarly, the beta result ( $\beta = 0.108$ ) explained that a unit change in delaying salaries and wages will increase SMEs' financial performance by 10.8%.

Furthermore, in discussing hypothesis three, which states that delaying wages and salaries influences SMEs' financial performance, the previous studies conducted by Abdulrahman (2023a) and Muo et al. (2020) found that delaying salaries and wages was used to address the situation during the post-COVID-19 pandemic and proved effective. However, Abdulrahman et al. (2024), Nkwasiwe et al. (2023), and Sunoma et al. (2021) did not concur with the finding of this study;

all three studies believe that delaying salaries and wages negatively affect performance. It should be noted at this juncture that, during the post-COVID-19 pandemic period, many SMEs resort to delaying payment by extending this month's salary and wages into another month, and some, based on an understanding with their employees, make half payment, all in an attempt to meet their liquidity position. This method, although not ethical, provides SMEs with funds that can meet their day-to-day operations.

Hypothesis four of this study states that deferring taxes influences SMEs' Financial Performance in the post-COVID-19 pandemic. Looking at the result from Table 4.5 ( $\alpha = 0.05$ ,  $\beta = 0.43$ , sig. = 0.000) indicates that  $\alpha = 0.05$  is statistically greater than sig. value (0.000) at 1% with this result, the hypothesis is accepted. The result went further to indicate that a unit change in DT will have a positive increase of 42.3% in SMEs' Financial Performance.

Moreover, in the discussion of hypothesis four (Ha4), the result was supported by previous studies conducted by Sabina and Ohimere (2023) and Nurdayadi (2019) that deferred tax influences performance. Contrary to the study finding, Aondahemba et al. (2021) argue from their study finding that deferred tax has a negative influence on financial performance. The study observed that in the post-pandemic period, most SMEs deferred payment of tax and used it as a

gateway to lubricate their liquidity problem. Similarly, as part of the government effort to cushion the effect of the pandemic during and after, by allowing a tax window for business enterprises to recoup and regain the financial losses they suffered during the pandemic period.

Hypothesis five (Ha5), which states that Payment in Arrears Influences SMEs' Financial Performance in the Post-COVID-19 pandemic. Looking at the result from Table 4.5 ( $\alpha = 0.05$ ,  $\beta = 0.227$ , sig. = 0.000) indicates that  $\alpha = 0.05$  is statistically greater than sig. value (0.000) with this result, the hypothesis is accepted. Furthermore, the beta result ( $\beta = 0.227$ ) signified that a unit increase in Payment in Arrears will lead to a 22.7% increase in SMEs' Financial Performance.

Lastly, the study result indicated that Payment in arrears positively and significantly influences SMEs' Financial Performance. This finding concurred with the earlier finding from the study conducted by Zwane and Iyade (2016) that payment in arrears creates a window for businesses to enjoy entrepreneurial activities with payment later. It should be noted that payment in arrears, such as electricity, water rates, and other utilities, empowered SMEs; their financial position in the post-COVID-19 pandemic period. Electricity and water take a substantial percentage of what is required in the production process, and many SMEs count on this to keep on breathing.

## 5.0 Summary, Conclusion, and Recommendation

The objective of the study is to examine the influence of delaying accounts payable as a bootstrapping technique on SMEs' Financial Performance in the post-COVID-19 pandemic in Kano State. Using a questionnaire administered to 362 SME owners/managers, and using multiple regression analysis, the study findings indicated that delaying payment to suppliers does not have a significant influence on SMEs' Financial Performance. The study, therefore, concludes that delaying payment to suppliers does not have an influence on SMEs' Financial Performance during the post-COVID-19 pandemic in the study area. However, Delaying Payment to Credit Lenders, Delaying Salary and Wages, Deferring Tax, and Payment in arrears were found to influence SMEs' Financial Performance in the study area.

### Recommendations

Based on the results and the findings of the study, the following recommendations were offered.

1. SMEs should avoid delaying payment to suppliers as a strategic alternative to raise funds internally, especially during economic upheavals caused by the pandemic, epidemic, or economic recessions. Delaying payment to suppliers attracts charges and sometimes penalties, which will negatively affect SMEs' financial performance.
2. However, SMEs should embark on Delaying Payment to Credit Lenders. This will help the business to maintain liquidity and solvency without resorting to additional capital during a period that is characterized by economic vagaries, and this will influence financial performance.
3. SMEs should adopt Delaying Salary and Wages, Deferring Tax, and Payment in Arrears as a bootstrapping strategy to raise funds, especially during the post-pandemic period. Raising funds through these strategies will enable operational efficiency that could influence SMEs' financial performance.

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## MOBILE BANKING AND FINANCIAL INCLUSION IN NIGERIA: INSIGHTS FROM OPAY DIGITAL BANKING

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### Abstract

*Financial inclusion is central to sustainable development and economic empowerment, especially in developing countries like Nigeria. While OPay's mobile banking network has indeed spread rapidly throughout Nigeria, the actual extent to which it increases financial inclusion remains uncertain, hence leaving a gap in understanding its actual effectiveness for underserved populations. This study investigated the role of mobile banking in promoting financial inclusion in Nigeria, using OPay Digital Banking as a case study. The study was anchored on the Diffusion of Innovation Theory, complemented by the Technology Acceptance Model and Financial Intermediation Theory. A descriptive survey design was adopted, and primary data were collected from OPay users across Lagos, Oyo, and Ogun States through structured questionnaires. Data were analyzed using descriptive and inferential statistics, including regression, correlation, and t-tests. Findings revealed that OPay significantly enhances financial inclusion. All service dimensions accessibility, affordability, transaction speed, range of services, and perceived security were significant positive predictors. Among specific services, mobile transfers showed the strongest correlation with financial inclusion, followed by mobile savings and bill payments. Challenges identified include digital literacy gaps, limited device access, trust issues, and weak network infrastructure. Despite these, comparative analysis showed that OPay's model outperforms traditional banking in accessibility, cost effectiveness, and service speed, making it a viable alternative for underserved populations. The study also established notable accounting and regulatory implications in areas such as transaction transparency, compliance with CBN guidelines, financial reporting, and KYC implementation. The study concludes that mobile banking platforms such as OPay are transformative for financial inclusion, delivering innovative, accessible, and affordable services. It recommends targeted digital literacy programs, adaptive regulatory frameworks, and stronger digital infrastructure. Contributions to knowledge include platform-specific empirical insights, a multi-theoretical explanatory framework, and pioneering evidence on regulatory and accounting implications of mobile banking in Nigeria.*

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**Keywords:** Mobile Banking, Financial Inclusion, Digital Financial Services, OPay, FinTech.

## **1.0 Introduction**

Financial inclusion is critical for attaining sustainable development and economic empowerment, especially in developing economies like Nigeria. It is widely acknowledged as a veritable instrument for capital formation and an economic strategy for facilitating wealth transfer across different segments of society (Bello, Umar, & Gawuna, 2023). Consequently, governments have continued to evolve policy measures aimed at attracting citizens into the dragnet of the formal financial system. Financial inclusion ensures access to and effective use of formal financial services, thereby enhancing household welfare, promoting poverty reduction, and supporting inclusive economic growth (Bello, 2025). Arun and Kamath (2015) conceptualise financial inclusion as a situation where individuals have access to affordable, convenient, and good-quality financial products delivered with dignity. Similarly, financial inclusion entails providing an adequate range of safe and affordable financial services to disadvantaged and vulnerable groups, such as low-income earners, rural dwellers, and undocumented persons—who have traditionally been excluded from the formal financial sector (Bello, Umar, & Gawuna, 2023). Despite various regulatory and institutional reforms, a large share of adults in Nigeria still operates outside the formal banking system. According to recent data from Enhancing Financial Innovation & Access (EFInA, 2023), over 36% of adults remain excluded from financial services,

while women, rural inhabitants, and informal-sector workers are disproportionately affected.

Empirical research further indicates persistent gaps in demographic, behavioural, and utilization data relating to value-added financial services among users of financial institutions. Bello, Umar, and Gawuna (2023) conceive financial inclusion as a process of broadening access to financial services for households and firms, emphasising not only availability but also fairness, transparency, affordability, and non-discrimination. Bello (2025) similarly stresses that beyond access, financial literacy is crucial for enabling individuals, particularly those in underserved regions to effectively utilise financial products and make informed financial decisions. Yusuf and Salami (2020) argue that inclusivity must be assessed across both accessibility and utilization dimensions. However, digital divides arising from disparities in smartphone ownership, mobile data access, and digital literacy continue to perpetuate financial exclusion (Ibrahim & Lawal, 2023).

In addition, regulatory and operational risks, such as cybersecurity threats, customer protection concerns, and financial fraud have emerged as significant challenges to inclusive digital finance in Nigeria (CBN, 2021). These challenges are particularly pronounced in rural northern Nigeria, where infrastructural limitations and low educational attainment constrain effective

participation in the formal financial system (Bello, 2025). Bello, Umar, and Gawuna (2023) further underscore that financial inclusion involves making a broader range of financial services available to individuals who previously had access only to basic products, yet this objective remains hindered by structural and institutional bottlenecks. Moreover, the issue of accountability has received limited attention in existing studies, particularly regarding the implications of mobile banking for financial reporting, taxation, and national financial statistics (Ogbonna & Chika, 2019).

Mobile banking has become a promising tool for addressing these gaps. It provides low-cost, accessible, and scalable alternatives to traditional banking, which is particularly valuable for underserved populations (Akinyele & Adeyemi, 2022). Mobile phone ownership and internet connectivity have increased in Nigeria and thus created an enabling environment for the adoption of mobile banking, evidence on the actual impact of mobile banking on financial inclusion remains limited and requires further investigation. The introduction of OPay in the year 2018 symbolizes a bright future in mobile-driven delivery of finance services. By means of payments, transfers, savings, as well as micro-credit services, the wide-reaching agent network associated with low fees appears to include both urban as well as peri-urban customers. It has been observed in market research studies that this organization has contributed positively towards widening accessibility

to basic finance services, especially within the uncounted categories of citizens (Onyema & Okeke, 2021).

Accordingly, although the mobile banking approach embraced by OPay supports the financial inclusion agenda in Nigeria, questions have arisen concerning inclusivity, sustainability, and regulation. The research, therefore, evaluates the use of mobile banking in enhancing financial inclusivity within Nigeria, utilizing a case study of OPay. The study is guided by a set of related research questions, objectives, and hypotheses that aim to provide an understanding of how mobile banking promotes financial inclusion in Nigeria through OPay. The first research question seeks to determine how much OPay's mobile banking platform has improved financial inclusion in Nigeria. The second question looks into which mobile banking services contribute the most to financial inclusion. The third research question investigates the main challenges users encounter when accessing and using OPay's mobile banking services. These issues include digital literacy, access to mobile devices, and trust. The fourth question compares OPay's digital banking model to traditional banking systems regarding cost, accessibility, and service efficiency. The fifth question examines the accounting and regulatory implications of mobile banking growth in Nigeria. The sixth research question assesses how well OPay aligns with Nigeria's national financial inclusion strategy and Central Bank policy objectives. The objectives

were all tested through null hypotheses formulated. Together, these connections ensure clarity between the study's questions, objectives, and hypotheses, facilitating a systematic investigation into how OPay's mobile banking affects financial inclusion, regulatory compliance, and accounting implications within Nigeria's evolving digital financial ecosystem.

This study is important because it adds to the discussion on mobile banking and financial inclusion in developing economies, especially Nigeria. It uses Opay Digital Banking as a case study to show how digital finance improves access for unbanked populations. For policymakers, it provides evidence to help refine strategies for financial inclusion (CBN, 2021; Adewuyi & Oke, 2022). FinTech operators can learn from Opay's consumer adoption and market penetration model (Uduji & Okolo-Obasi, 2020; Olayemi, 2023). Academically, it addresses a gap in research focused on specific digital banking operators (Chima & Ngige, 2019; Oladeji & Dada, 2021). It also points out the socioeconomic benefits of mobile banking for marginalized groups (World Bank, 2022; Ibrahim & Yusuf, 2024).

## **2.0 Literature Review**

### **2.1 Conceptual Review**

#### **2.1.1 Concept of Mobile Banking**

Mobile banking involves providing financial and financial services through mobile devices. This lets customers perform transactions like checking

balances, transferring funds, paying bills, and saving money without going to a physical bank branch (Adewuyi & Oke, 2022). It is a part of digital banking that uses mobile technologies to offer services, especially in places where traditional banking options are limited. In developing countries such as Nigeria, mobile banking is increasingly seen as a crucial tool for tackling financial exclusion. Uduji and Okolo-Obasi (2020) note that mobile banking services using USSD, SMS, and smartphone apps help bridge the access gap for underserved groups by providing flexible, low-cost, and real-time services. Unlike traditional banking, mobile banking relies on agent networks, digital wallets, and mobile networks to process transactions, which decreases dependence on formal bank branches. The rise of mobile phones in Nigeria, fueled by lower device costs and greater internet access, has created a favourable environment for mobile banking services. Companies like Opay, Moniepoint, and PalmPay have used mobile technology to create user-friendly financial platforms that meet the needs of low-income earners, informal traders, and rural residents (Olayemi, 2023).

#### **2.1.2 Concept of Financial Inclusion**

Financial inclusion means providing and making affordable financial services available, such as savings, loans, insurance, and payment systems to everyone, especially those who are typically excluded from formal financial systems (World Bank, 2022). The main goal is to include marginalized

individuals, particularly the unbanked and underbanked, in the formal financial system to enhance their economic well-being and reduce poverty. In Nigeria, financial inclusion is essential for supporting national development, promoting gender equality, and aiding small and medium enterprises (CBN, 2021). The Central Bank of Nigeria's updated National Financial Inclusion Strategy (NFIS) aims to ensure that 95% of Nigerians have access to formal financial services by 2024. However, as of 2021, more than 36% of adults remained excluded from financial services (CBN, 2021). Factors contributing to financial exclusion in Nigeria include the lack of identity documents, high banking fees, low financial literacy, limited branch access in rural areas, and inadequate infrastructure. Mobile banking services serve as an alternative approach to overcoming these structural challenges (Ibrahim & Yusuf, 2024).

### **2.1.3 Opay and the Evolution of FinTech in Nigeria**

Opay is a FinTech company that started in Nigeria in 2018. It offers a range of mobile financial services, including money transfers, bill payments, airtime purchases, and agent banking through a mobile app and USSD interface. It operates within a broader FinTech ecosystem, using technology to improve financial access, user experience, and service delivery. What makes Opay unique is its large network of agents, who act as financial intermediaries in both urban and remote locations. These agents

help with cash-in and cash-out transactions, on board new users, and provide personalized services. Oladeji and Dada (2021) explain that this agent-led model significantly increases reach and trust, especially among people with limited digital literacy. Opay's business model also includes lending and savings products designed to empower micro-entrepreneurs and small business owners. By utilizing its digital infrastructure and mobile-first approach, Opay helps promote financial inclusion by eliminating traditional obstacles such as high operating costs, delays, and the need for formal documentation (Chima & Ngige, 2019).

### **2.1.4 Mobile Banking as a Catalyst for Financial Inclusion**

The link between mobile banking and financial inclusion is mutually beneficial. Mobile banking platforms are flexible, decentralized, and user-focused by design. These features make them well-suited for reaching unbanked populations, especially in areas with insufficient financial infrastructure. Mobile banking promotes financial inclusion through several key ways:

- i. **Accessibility:** Mobile banking lowers physical and geographical barriers to financial services. People in rural areas can complete transactions without going to a bank branch.
- ii. **Affordability:** Digital financial services generally have reduced transaction fees than traditional banking, making them ideal for low-income users.

- iii. Convenience: Users can carried out transactions in real time, any time of day, which is particularly helpful for traders, artisans, and small business operators.
- iv. Product Diversification: Mobile banking platforms offer a variety of services such as payments, loans, insurance, and savings which are on a single interface, allowing users to build financial resilience over time. Research has shown that using mobile financial services in Nigeria has led to greater saving habits, expanded access to microloans, and enhanced economic inclusion, especially for women and youth (Uduji & Okolo-Obasi, 2020). Additionally, platforms like Opay encourage financial literacy through digital prompts and agent-based education.

### **2.1.5 Challenges of Mobile Banking and Financial Inclusion in Nigeria**

Despite the promise of mobile banking to advance financial inclusion, several issues remain in Nigeria. One significant problem is digital literacy among many users, particularly in rural areas, do not have the technical skills needed to navigate mobile banking apps (Ibrahim & Yusuf, 2024). This often leads to reliance on agents, which may limit independence and user confidence. Another issue is network reliability and technology infrastructure, which impact service dependability. Power outages, limited internet coverage, and system downtimes can disrupt transactions and discourage repeat usage (Oladeji & Dada, 2021). In

addition, concerns about cybersecurity and a lack of trust in digital platforms are major obstacles to broader adoption. Regulatory uncertainty further complicates how FinTech platforms operate. While the Central Bank of Nigeria has issued various policies to support digital finance, inconsistent enforcement and coordination among stakeholders can create operational difficulties (CBN, 2021). Finally, even though Opay and similar platforms have grown quickly, concerns about sustainability and scalability persist, especially in areas lacking sufficient infrastructure, financial education, and mechanisms to build trust.

### **2.2 Empirical Review**

Empirical studies in Nigeria show that mobile banking is a key driver of financial inclusion, especially for underserved and low-income groups. Researchers have looked into various aspects of this relationship, from how mobile financial platforms improve access to formal financial services to the behaviours and institutional factors that influence user adoption.

Uduji and Okolo-Obasi (2020) carried out a study in rural communities in South-Eastern Nigeria. They examined the role of mobile banking in improving financial access for women. Their findings, based on probit regression analysis, indicated that mobile banking significantly increased the chance of rural women saving, obtaining group loans, and using digital payment systems. The presence of

mobile money agents was crucial for enabling this access, highlighting the importance of physical agent networks to support digital solutions. The authors concluded that mobile banking promotes financial independence among women and boosts their involvement in the financial system. Similarly, Oladeji and Dada (2021) studied Lagos and Ogun States to see how trust, affordability, and accessibility affect mobile banking usage. They found that trust in digital platforms like Opay and PalmPay was the strongest factor influencing adoption. Users who viewed these platforms as secure and transparent were much more likely to carry out regular transactions and save digitally. The study also reported that mobile banking users were 2.4 times more likely to access credit services compared to non-users, showing a clear link between digital financial tools and credit inclusion. The findings stressed that platform credibility and user experience are crucial for continued adoption.

Ibrahim and Yusuf (2024) expanded their study to Northern Nigeria, where mobile banking adoption is lower. Using structural equation modeling (SEM) on data from Kano, Abuja, and Kaduna, they found that perceived ease of use, perceived usefulness, and social influence significantly impacted the intention to adopt mobile financial services. Their research underscored the role of financial literacy as a moderating factor, suggesting that even when mobile services are available, limited knowledge can hinder usage. Moreover, users of Opay reported

better customer service and easier navigation compared to traditional banking apps, emphasizing the platform's increasing importance in northern regions. A broader study by Adewuyi and Oke (2022) analyzed panel data from Nigeria's 36 states to investigate how mobile money transactions affect financial inclusion indicators. By using fixed-effects regression models from 2015 to 2021, the authors concluded that mobile money usage significantly increased account ownership and transaction frequency, especially in rural areas. A 1% increase in mobile transactions linked to a 0.45% rise in formal account ownership. The research also showed that states with a higher concentration of mobile agents experienced a larger reduction in the financial inclusion gap between urban and rural areas. These results strongly support the idea that mobile banking is an effective tool for reducing financial access disparities in Nigeria.

Olayemi (2023) carried out a specific case study on Opay's impact on financial access for informal sector workers in Lagos. Through interviews and transaction data from market traders, commercial drivers, and artisans, the study found that 68% of Opay users had never used a bank account before joining the platform. The platform's zero-fee policy and extensive agent network greatly reduced the cost and complexity of entering the formal financial system. Agent proximity, defined as being within a 500-meter radius, was a key factor in ongoing usage. These findings illustrate

how platform design and human infrastructure together shape user behavior and financial inclusion outcomes.

Finally, Chima and Ngige (2019) researched the role of mobile banking in supporting small and medium-sized enterprises (SMEs) in Nigeria. By surveying 150 SMEs, the authors found that mobile banking made it easier to access business credit and track payments. Businesses that adopted mobile payment tools showed improved financial management and were more likely to qualify for microfinance loans. However, the study also pointed out ongoing challenges like network instability and high data costs, which limited wider use among SMEs in less-connected regions. Overall, the empirical literature in Nigeria offers strong evidence that mobile banking platforms, particularly agent-based models like Opay, significantly boost financial inclusion. Key factors include affordability, simplicity, agent availability, and trust, while challenges include low digital literacy and inadequate telecommunications infrastructure. The studies collectively suggest that mobile banking is not just a technological change but a socioeconomic measure capable of enhancing financial access, especially when it meets user needs and is backed by supportive regulations.

Several studies outside Nigeria have examined how mobile banking impacts financial inclusion, particularly in developing and emerging economies.

These studies offer comparative perspectives and highlight both the universal potential and specific challenges of mobile banking platforms in closing the financial gap.

In Kenya, Jack and Suri (2020) provided key evidence on how mobile money services, especially M-Pesa, have significantly contributed to financial inclusion and poverty reduction. Their longitudinal study over six years revealed that access to mobile money increased savings behavior and helped households manage financial shocks better. The research found that mobile money usage lifted around 194,000 Kenyan households out of extreme poverty, particularly benefiting female-headed households and emphasizing the gender aspect of digital financial access. The presence of widespread agent networks and low transaction fees were crucial for uptake in rural and low-income areas.

In Tanzania, a study by Mbiti and Weil (2019) showed that platforms like Tigo Pesa and Airtel Money significantly improved access to formal financial services. By using nationally representative survey data and econometric modeling, they discovered that mobile financial services led to a 34% rise in formal account ownership within five years. The study underscored the importance of interoperability between mobile networks for better service accessibility and lower user switching costs. However, it also mentioned

ongoing issues like low digital literacy and trust that hindered broader adoption.

In Bangladesh, Rashid and Islam (2021) looked at how rural households adopted mobile financial services (MFS). They found that the main motivator for adoption was the ability to receive remittances and agricultural payments safely and quickly. Services like bKash and Rocket allowed smoother transactions without requiring users to travel long distances to banks. The authors noted that rural populations valued the speed, convenience, and affordability of mobile banking but stressed the need for policy support to enhance agent liquidity and training. These findings are especially relevant in contexts like Nigeria, where financial access in rural areas remains limited.

In India, Gupta and Arora (2022) examined what drives mobile banking adoption and its effects on financial inclusion among low-income earners. Using structural equation modeling with data from five Indian states, they found that perceived usefulness, perceived ease of use, and trust were important factors for mobile banking usage. Their results indicated that mobile banking reduced reliance on cash transactions and informal lending, enhancing formal financial engagement. Interestingly, the study revealed that women who used mobile banking were more likely to engage in group savings and financing for small businesses, reflecting trends observed in parts of Sub-Saharan Africa. South Africa

offers another example of mobile banking's evolution. A study by Karanja and Moyo (2023) assessed how mobile banking improved financial access for urban and peri-urban populations. Based on survey data and logistic regression, the study found that mobile financial services increased usage of credit and savings products among the informal sector. Notably, it highlighted that financial inclusion was improved not only through mobile apps but also via USSD-based platforms, catering to users without smartphones. Support from the South African Reserve Bank and collaborations between banks and telecom companies were vital for expanding the digital financial system.

In Pakistan, Ahmed and Khan (2021) explored how branchless banking systems like EasyPaisa and JazzCash contributed to financial inclusion. Their study found that mobile banking narrowed the financial access divide between urban and rural areas by enabling real-time transactions and facilitating government-to-person (G2P) transfers. Analyzing panel data from 2013 to 2020, they concluded that mobile banking significantly impacted account ownership and the use of formal savings products. However, socio-cultural barriers, such as gender norms and the lack of digital identification, limited the full advantages of these services for certain segments of the population. These international studies collectively highlight the transformative potential of mobile banking in promoting financial inclusion across various settings.

Common findings indicate that factors like ease of use, trust, agent network availability, and regulatory support are key enablers. At the same time, challenges such as low digital literacy, gender disparities, and infrastructure limitations persist. These insights offer valuable lessons for Nigeria and reinforce the broader relevance of mobile financial services as a tool for inclusive economic development.

## **2.3 Research Framework and Underpinning Theory**

### **2.3.1 Research Framework**

This study is based on the idea that digital financial services, especially mobile banking, can help close long-standing gaps in financial inclusion in Nigeria. The conceptual framework aims to explore how OPay Digital Banking contributes to increasing access to financial services for unbanked and underbanked populations. It identifies the main factors that affect financial inclusion, which is the key focus of this study. At the center of the framework are the mobile banking services provided by OPay, which serve as the primary independent variable. These services include mobile money transfers, bill payments, airtime purchases, digital savings wallets, and micro-credit options. They are designed to eliminate traditional barriers to banking access, such as the distance to bank branches, high transaction fees, and the paperwork that comes with formal banking. The framework assumes that making these digital financial services available will positively impact financial

inclusion. It suggests that easier, cheaper, and more flexible banking services can help bring excluded groups into the financial system. However, mobile banking's effectiveness in improving financial inclusion is not certain, as various challenges can affect its impact.

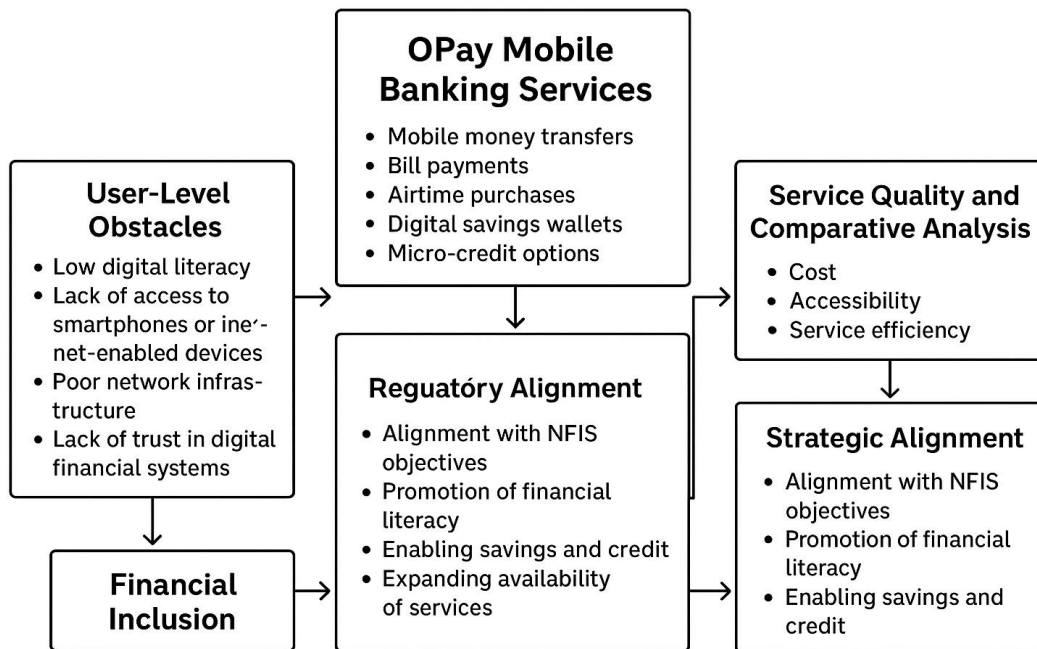
The second set of variables in the framework includes user-level obstacles. This includes low digital literacy, lack of access to smartphones or internet-enabled devices, poor network infrastructure, and lack of trust in digital financial systems. These issues can greatly influence the adoption and continued use of mobile banking platforms like OPay, especially among people in rural areas, low-income earners, and those in the informal workforce. As a result, the framework expects these constraints to either reduce or delay the anticipated benefits of digital financial inclusion. In addition to evaluating OPay's services on their own, the study aims to compare OPay's digital banking model with that of traditional banks concerning cost, accessibility, and service efficiency. The idea is that OPay's mobile-first and agent-based approach may provide a more inclusive and affordable option for financially marginalized groups compared to traditional banking. This aspect of the framework allows for a comparative analysis to determine whether digital banking platforms genuinely offer an advantage over conventional financial institutions in reaching excluded populations.

Another important aspect of the framework is the accounting and regulatory implications, recognizing that mobile banking operates within a wider financial ecosystem. As a financial service provider, OPay must follow the regulations set by the Central Bank of Nigeria (CBN) regarding consumer protection. It includes, Know-Your-Customer (KYC) standards, anti-money laundering (AML) guidelines, and data protection. The study looks at how these regulatory requirements affect the accountability, transparency, and operational integrity of OPay's services. It also investigates whether OPay's financial operations are properly integrated into Nigeria's official accounting and financial reporting systems.

A further key element in the conceptual framework is its alignment with national financial inclusion strategies and policy goals. The CBN and other stakeholders have set clear objectives for increasing access to formal financial services, as

detailed in the National Financial Inclusion Strategy (NFIS). The framework assumes that for a mobile banking platform like OPay to make a lasting impact, it must not only provide services efficiently but also align with these larger policy aims. This includes promoting financial literacy, enabling savings and credit, ensuring affordability, and expanding service availability to underserved populations.

Overall, the conceptual framework in Figure 2.1 shows a complex relationship where mobile banking services (through OPay) are expected to affect financial inclusion directly or through mediating factors such as user challenges, service quality, regulatory compliance, and strategic alignment. It highlights the intricate connections between technology, policy, accounting, and financial access in a developing country context like Nigeria. This framework shape the study's design, variable selection, hypothesis testing, and interpretation of results.



### 2.3.2 Theoretical Review and Underpinning Theory

This section looks at theories that explain how mobile banking is adopted and its connection to financial inclusion, especially in a developing economy like Nigeria.

#### 2.3.2.1 Diffusion of Innovation Theory (Anchor Theory)

The Diffusion of Innovation Theory (DOI), created by Everett Rogers in 1962 and updated over the years, explains how new ideas, technologies, or innovations spread within a social system. The theory identifies five main categories of adopters: innovators, early adopters, early majority, late majority, and laggards. It outlines four key elements that influence diffusion: the innovation itself, communication channels, time, and the social system (Rogers, 2003). Opay mobile banking is seen as a financial

innovation. The adoption and use of Opa’s digital financial services among Nigerians depend on factors like perceived usefulness, ease of use, trialability, and observability of the innovation. The social system, which includes cultural attitudes, literacy levels, and trust in technology, also affects how people adopt it (Adewuyi & Oke, 2022). This theory is a good fit as the anchor for this study because it helps understand how Opay’s mobile banking innovations spread throughout both banked and unbanked populations. The theory is relevant to the study because it explains the different rates of Opay adoption across socio-economic groups. It connects innovation characteristics, like simplicity and cost-effectiveness, to user behavior. iii. It supports the investigation into how information flows affect adoption.

### **2.3.2.2 Technology Acceptance Model (TAM)**

The Technology Acceptance Model (TAM), developed by Davis in 1989, suggests that two main factors which are perceived usefulness (PU) and perceived ease of use (PEOU)—drive a person's intention to use a new technology. According to the model, users are more likely to adopt a technology if they believe it will improve their performance and if the system is easy to use. For Opay mobile banking, perceived usefulness might refer to how users see the platform's convenience for financial transactions. Ease of use could relate to the clarity of the user interface, availability of USSD codes for non-smartphone users, and the presence of agents to help with operations (Oladeji & Dada, 2021). TAM complements the Diffusion of Innovation Theory by focusing specifically on how users evaluate technology. While DOI emphasizes social and systemic factors in the spread of innovation, TAM focuses on individual decision-making and behavioural intentions. Relevance to the study: i. It helps analyze how perceptions shape users' attitudes toward Opay. ii. It supports the evaluation of behavioural intent and actual usage. iii. It provides a framework for measuring technology acceptance.

### **2.3.2.3 Financial Intermediation Theory**

The Financial Intermediation Theory, initially developed by Gurley and Shaw in 1960 and expanded by later researchers, states that financial institutions act as intermediaries to efficiently allocate

capital in an economy. By lowering transaction and information costs, financial intermediaries like banks connect savers and borrowers, which promotes economic growth and development. Mobile banking platforms like Opay act as digital financial intermediaries by cutting traditional costs linked to accessing financial services. They allow faster and cheaper transactions, provide access to micro-loans and savings tools, and extend financial services beyond formal banking setups (World Bank, 2022). In Nigeria, where millions are excluded from the formal banking sector, Opay's role as a financial intermediary is crucial. The platform helps connect the unbanked with formal finance, promoting inclusive growth and the development of the informal sector (Ibrahim & Yusuf, 2024). Relevance to the study: i. It supports viewing Opay as a digital intermediary. ii. It positions mobile banking as a response to market failures in traditional banking. iii. It highlights the broader economic effects of financial inclusion.

### **2.3.2.4 Theoretical Foundation**

Diffusion of Innovation Theory is chosen as the anchor theory for this study. It best explains how mobile banking services like Opay spread among different social groups in Nigeria. It directly connects to the study's objectives of examining adoption patterns, user engagement, and how it promotes financial inclusion. The Technology Acceptance Model adds to this by offering insights into user behavior at the individual level. In contrast, the

Financial Intermediation Theory explains how platforms like OPay fulfill economic roles by broadening access to capital and financial services. Together, these theories create a comprehensive framework for understanding how mobile banking platforms contribute to inclusive financial growth in Nigeria.

### **3.0. Method**

This study uses a descriptive survey research design to examine how mobile banking promotes financial inclusion in Nigeria, focusing specifically on OPay Digital Banking. This design is effective because it allows for the collection of detailed information about current conditions, user views, and experiences, especially among unbanked and underbanked groups. It helps the researcher evaluate how OPay's digital services have improved access to financial products and services in areas that lack them. Structured questionnaires gather both quantitative and qualitative data to identify usage patterns, relationships, and perceptions across various demographic groups. This approach supports the goal of providing evidence on how mobile banking drives inclusion (CBN, 2021; Adewuyi & Oke, 2022).

The study population consists of individual users of OPay's mobile banking services in selected states in Nigeria. The focus is on urban and semi-urban areas where OPay operates extensively. This includes users who conduct transactions like transfers, bill payments, and savings through the OPay

app and agent network. Informal sector workers and small-scale entrepreneurs who rely on mobile banking for daily financial activities are also part of the study. Given OPay's large customer base, the study pays particular attention to Lagos, Oyo, and Ogun States, which show high adoption of mobile banking and ongoing financial inclusion challenges. This population offers a suitable sample for assessing how OPay expands financial access (Olayemi, 2023; Uduji & Okolo-Obasi, 2020).

A multi-stage sampling technique that combines purposive and stratified random sampling is used. Purposive sampling selects the three states known for their strong mobile banking presence, while stratified sampling organizes respondents by demographic details such as age, gender, and service usage. Participants are randomly selected from each group to ensure diversity and objectivity.

A total of 300 respondents are chosen, which is a sufficient size for generalization and inferential analysis (Oladeji & Dada, 2021). Data are gathered from both primary and secondary sources. Primary data come from structured questionnaires that examine users' experiences, challenges, and views on OPay's services. Secondary data are sourced from reports by the Central Bank of Nigeria (CBN), the National Bureau of Statistics (NBS), OPay, and the World Bank, which help provide context and validate findings (World Bank, 2022; Ibrahim & Yusuf, 2024). To ensure the

study's validity, experts in accounting and financial technology reviewed the questionnaire for content and face validity. A pilot test was conducted to refine unclear items. Reliability was assessed using Cronbach's Alpha, with a coefficient above 0.70 indicating internal consistency (Chima & Ngige, 2019). Therefore, the instrument was deemed reliable and appropriate for evaluating OPay's impact on financial inclusion in Nigeria.

### **Measurement of Variables**

The variables in this study fall into three categories: independent, dependent, and control variables. They are measured using structured questionnaire items based on a 5-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (5).

i. Independent Variable, Mobile Banking Services: This is measured using indicators like accessibility, affordability, ease of use, transaction speed, security, and range of services, such as transfers, bill payments, savings, and airtime purchases. Respondents rate their agreement with statements about their experience with OPay's mobile banking services.

ii. Dependent Variable, Financial Inclusion: Financial inclusion is measured by how respondents access and use formal financial services. Key indicators include access to savings accounts, credit, insurance, digital payments, and the frequency of mobile transactions. Questions evaluate whether OPay has

helped respondents access services that were previously unavailable through traditional banks. iii. Control Variables: Demographic factors, including age, gender, income level, education, and location (urban or semi-urban), are included as control variables. This helps to examine how personal characteristics may affect the relationship between mobile banking and financial inclusion. Each construct is operationalized through multiple questionnaire items, and composite scores are calculated for analysis. This measurement approach makes sure that variables are assessed quantitatively in a way that fits both descriptive and inferential statistical methods.

### **Model Specification**

To explore the connection between mobile banking services and financial inclusion, this study uses a multiple linear regression model. The model estimates how key aspects of mobile banking affect financial inclusion among OPay users in Nigeria while considering relevant demographic traits.

The model is represented as:

$$FI = \beta_0 + \beta_1 AS + \beta_2 AU + \beta_3 TS + \beta_4 RS + \beta_5 SE + \beta_6 DV + \epsilon$$

Where:

FI = Financial Inclusion (dependent variable)

AS = Accessibility of OPay services

AU = Affordability/Usage Cost

TS = Transaction Speed and Efficiency

RS = Range of Services (e.g., transfers, savings, bills)

SE = Perceived Security of Transactions  
DV = Demographic Variables (e.g., age, gender, income level, education)  
 $\beta_0$  = Constant term  
 $\beta_1$ – $\beta_6$  = Coefficients of the explanatory variables  
 $\epsilon$  = Error term (captures unobserved factors)

This model tests the main hypothesis that mobile banking services from OPay have a significant impact on the level of financial inclusion among users. The variables come from established constructs in earlier studies and are measured using Likert-scale items in the questionnaire.

Estimation will be performed using the Ordinary Least Squares (OLS) technique. The adequacy of the model will be examined through diagnostic statistics like R-squared, F-statistic, and significance levels (p-values).

### **Data Analysis Techniques**

The data collected were analyzed using both descriptive and inferential statistical methods, with help from the Statistical Package for the Social Sciences (SPSS) version 25.

### **Descriptive Analysis**

Descriptive statistics such as frequency distributions, percentages, means, and standard deviations summarized respondents' demographic details and responses to key questionnaire items. This gives a clear view of mobile banking usage patterns and financial inclusion

levels among OPay users. Inferential Analysis

To test the research hypotheses and analyze the connection between mobile banking services and financial inclusion, the study uses multiple linear regression analysis. This approach allows the researcher to evaluate the predictive power of independent variables such as accessibility, affordability, transaction speed, range of services, and security on the dependent variable—financial inclusion. The regression model identifies the statistical significance of each independent variable and how much it explains variations in financial inclusion levels.

The analysis includes: - Correlation analysis to assess the strength and direction of relationships among variables - Regression coefficients to identify effect size and significance (p-values) - R-squared and Adjusted R-squared values to evaluate the model's explanatory power - F-statistic to test overall model significance All statistical tests are conducted at a 5% significance level ( $\alpha = 0.05$ ). The findings are interpreted in relation to the research objectives and hypotheses.

## **4.0 Results and Discussion**

### **4.1 Descriptive Statistical Analysis**

This section shows the descriptive statistics of the variables used in the study. It provides insights into the characteristics of the data collected from

300 OPay users in Lagos, Oyo, and Ogun states.

**Table 4.1: Descriptive Statistics of Study Variables**

Variable	N	Mean	Std. Deviation	Skewness	Kurtosis	Min	Max
Financial Inclusion (FI)	300	3.78	0.94	-0.412	-0.221	1.20	5.00
Accessibility (AS)	300	4.12	0.82	-0.734	0.156	1.50	5.00
Affordability/Usage Cost (AU)	300	3.95	0.89	-0.523	-0.089	1.25	5.00
Transaction Speed (TS)	300	4.02	0.86	-0.645	0.234	1.40	5.00
Range of Services (RS)	300	3.85	0.91	-0.398	-0.156	1.30	5.00
Perceived Security (SE)	300	3.67	1.02	-0.289	-0.445	1.10	5.00

**Source:** Researcher Compilation, 2025

The descriptive statistics in table 4.1 show that all variables have means above the midpoint of 3.0 on the 5-point Likert scale, indicating generally positive views among OPay users. Accessibility (AS) had the highest mean score of 4.12 (SD = 0.82), suggesting that respondents see OPay services as very accessible. Financial Inclusion (FI) had a mean of 3.78 (SD = 0.94), indicating that users feel OPay has moderately to significantly

improved their access to financial services. The skewness values for all variables range from -0.734 to -0.289, suggesting slight negative skewness. This means that most responses clustered around the higher end of the scale. The kurtosis values range from -0.445 to 0.234, indicating that the data distributions are roughly normal, which is good for parametric statistical analyses.

**Table 4.2: Demographic Characteristics of Respondents**

Demographic Variable	Frequency	Percentage
Gender		
Male	178	59.3
Female	122	40.7
Age Group		
18-25 years	89	29.7
26-35 years	124	41.3
36-45 years	67	22.3
Above 45 years	20	6.7
Education Level		
Secondary	78	26.0
Tertiary	182	60.7
Postgraduate	40	13.3
Monthly Income		
Below ₦50,000	95	31.7
₦50,000-₦100,000	108	36.0
₦100,001-₦200,000	67	22.3
Above ₦200,000	30	10.0
Location		
Lagos	135	45.0
Oyo	89	29.7
Ogun	76	25.3

**Source:** Researcher Compilation, 2025

The demographic analysis in table 4.2 shows how the respondents are distributed. Most respondents, 59.3%, were male. The largest age group was 26-35 years, making up 41.3% of the total, which represents the economically active

population. A majority of respondents, 60.7%, had tertiary education. Additionally, 36.0% earned between ₦50,000 and ₦100,000 monthly, suggesting a mainly middle-income sample.

## 4.2 Hypotheses Testing

### 4.2.1 Hypothesis One ( $H_{01}$ )

$H_{01}$  : OPay's mobile banking services have no significant impact on financial inclusion among unbanked and underbanked populations in Nigeria.

**Table 4.3:** Multiple Regression Analysis - Impact of OPay Services on Financial Inclusion

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	F	Sig.
1	0.789	0.623	0.616	0.582	97.342	0.000*

Coefficients Table:

Variable	B	Std. Error	Beta	t	Sig.	VIF
(Constant)	0.456	0.198		2.303	0.022	
Accessibility (AS)	0.324	0.067	0.282	4.836	0.000*	1.234
Affordability (AU)	0.289	0.063	0.274	4.587	0.000*	1.189
Transaction Speed (TS)	0.267	0.065	0.245	4.108	0.000*	1.156
Range of Services (RS)	0.198	0.058	0.192	3.414	0.001*	1.098
Perceived Security (SE)	0.156	0.052	0.169	3.000	0.003*	1.067

**Source:** Researcher Compilation, 2025

\*Significant at  $p < 0.05$

The multiple regression analysis in table 4.3 shows that OPay's mobile banking services significantly predict financial

inclusion ( $F = 97.342, p < 0.001$ ). The model accounts for 62.3% of the variance in financial inclusion ( $R^2 = 0.623$ ). All

independent variables are significant predictors: Accessibility ( $\beta = 0.282, p < 0.001$ ), Affordability ( $\beta = 0.274, p < 0.001$ ), Transaction Speed ( $\beta = 0.245, p < 0.001$ ), Range of Services ( $\beta = 0.192, p = 0.001$ ), and Perceived Security ( $\beta = 0.169, p = 0.003$ ). Consequently,  $H_{0 1}$  is rejected. This means that OPay's mobile

banking services have a significant positive impact on financial inclusion.

#### 4.2.2 Hypothesis Two ( $H_{0 2}$ )

$H_{0 2}$  : There is no significant relationship between the use of specific digital financial services offered by OPay and the level of financial inclusion.

**Table 4.4:** Correlation Analysis - OPay Services and Financial Inclusion

OPay Services	Financial Inclusion	Sig. (2-tailed)
Mobile Transfers	0.672**	0.000
Bill Payments	0.589**	0.000
Mobile Savings	0.634**	0.000
Airtime Purchase	0.456**	0.000
Merchant Payments	0.521**	0.000

**Source:** Researcher Compilation, 2025

\*\*Correlation is significant at the 0.01 level (2-tailed)

The correlation analysis in table 4.4 shows strong positive relationships between all specific OPay services and financial inclusion. Mobile transfers show the strongest correlation ( $r = 0.672, p < 0.001$ ). This is followed by mobile savings ( $r = 0.634, p < 0.001$ ) and bill payments ( $r = 0.589, p < 0.001$ ). All correlations are statistically significant at  $p < 0.001$ . Therefore,  $H_{0 2}$  is rejected,

confirming significant relationships between specific OPay services and levels of financial inclusion.

#### 4.2.3 Hypothesis Three ( $H_{0 3}$ )

$H_{0 3}$  : Challenges such as digital literacy, access to mobile devices, and trust in mobile banking have no significant effect on the usage of OPay's services.

**Table 4.5:** Multiple Regression Analysis - Challenges Affecting OPay Usage

Model Summary	R	R Square	Adjusted R Square	Std. Error
	0.712	0.507	0.502	0.647

ANOVA Results: F = 101.234, Sig. = 0.000\*

**Coefficients:**

Challenge Variables	B	Std. Error	Beta	t	Sig.
Digital Literacy	-0.387	0.076	-0.312	-5.092	0.000*
Device Access	-0.298	0.068	-0.267	-4.382	0.000*
Trust Issues	-0.234	0.071	-0.201	-3.296	0.001*
Network Infrastructure	-0.189	0.063	-0.178	-3.000	0.003*

**Source:** Researcher Compilation, 2025

\*Significant at  $p < 0.05$

The regression analysis in table 4.5 shows that challenges have a significant impact on OPay usage ( $F = 101.234$ ,  $p < 0.001$ ), accounting for 50.7% of the variance. Each challenge variable has a significant negative effect: Digital Literacy ( $\beta = -0.312$ ,  $p < 0.001$ ), Device Access ( $\beta = -0.267$ ,  $p < 0.001$ ), Trust Issues ( $\beta = -0.201$ ,  $p = 0.001$ ), and Network Infrastructure ( $\beta = -0.178$ ,  $p = 0.003$ ).

Thus,  $H_0 3$  is rejected, confirming that these challenges significantly limit OPay service usage.

**4.2.4 Hypothesis Four ( $H_0 4$ )**

$H_0 4$  : There is no significant difference between OPay's mobile banking model and traditional banking in terms of cost, accessibility, and service delivery.

**Table 4.6:** Paired Sample t-test - OPay vs Traditional Banking Comparison

Comparison Dimension	Opay Mean	Traditional Banking Mean	Mean Difference	t-value	Sig. (2-tailed)
Cost Effectiveness	4.23	2.87	1.36	12.456	0.000*
Accessibility	4.12	2.94	1.18	10.892	0.000*
Service Delivery Speed	4.05	2.76	1.29	11.234	0.000*
Overall Satisfaction	3.98	2.82	1.16	9.876	0.000*

**Source:** Researcher Compilation, 2025

\*Significant at  $p < 0.05$

The paired sample t-tests in table 4.6 show clear differences between OPay and traditional banking in all areas. OPay does much better than traditional banking in cost effectiveness ( $t = 12.456$ ,  $p < 0.001$ ), accessibility ( $t = 10.892$ ,  $p < 0.001$ ), and service delivery speed ( $t = 11.234$ ,  $p < 0.001$ ). As a result,  $H_{0 4}$  is rejected,

indicating significant differences favoring OPay's mobile banking model.

#### 4.2.5 Hypothesis Five ( $H_{0 5}$ )

$H_{0 5}$ : OPay's operations have no significant accounting or regulatory implications within the Nigerian financial system.

**Table 4.7:** One-Sample t-test - Regulatory and Accounting Implications

Implication Areas	Test Value = 3	Mean	t-value	Sig. (2-tailed)	Mean Difference
Transaction Transparency	3.89	8.234	0.000*	0.89	
Compliance with CBN Regulations	3.76	7.892	0.000*	0.76	
Financial Reporting Standards	3.67	6.123	0.000*	0.67	
KYC Implementation	3.82	7.456	0.000*	0.82	

**Source:** Researcher Compilation, 2025

\*Significant at  $p < 0.05$

The one-sample t-tests in table 4.7 show that all regulatory and accounting dimensions are significantly above the neutral point of 3.0. This indicates important consequences. Transaction transparency ( $t = 8.234, p < 0.001$ ), CBN compliance ( $t = 7.892, p < 0.001$ ), and financial reporting ( $t = 6.123, p < 0.001$ ) all show significant positive consequences. Therefore,  $H_0 5$  is

rejected. This confirms that OPay's operations have significant accounting and regulatory implications.

#### 4.2.6 Hypothesis Six ( $H_0 6$ )

$H_0 6$  : OPay's activities do not significantly align with the Central Bank of Nigeria's financial inclusion strategy and national financial policy objectives.

**Table 4.8:** Multiple Regression Analysis - Alignment with CBN Strategy

Model Summary	R	R Square	Adjusted R Square	F	Sig.
	0.834	0.695	0.691	167.892	0.000*

**Table of Coefficients:**

CBN Strategy Alignment	B	Std. Error	Beta	t	Sig.
Financial Access Expansion	0.456	0.058	0.398	7.862	0.000*
Digital Payment Promotion	0.389	0.052	0.356	7.480	0.000*
Rural Financial Inclusion	0.298	0.061	0.267	4.885	0.000*
SME Support	0.234	0.055	0.212	4.255	0.000*

**Source:** Researcher Compilation, 2025

\*Significant at  $p < 0.05$

The analysis in table 4.8 shows a strong connection between OPay activities and CBN strategy ( $F = 167.892, p < 0.001$ ). It explains 69.5% of the variance. All dimensions of alignment are significant: Financial Access Expansion ( $\beta = 0.398, p < 0.001$ ), Digital Payment Promotion ( $\beta = 0.356, p < 0.001$ ), Rural Financial Inclusion ( $\beta = 0.267, p < 0.001$ ), and SME Support ( $\beta = 0.212, p < 0.001$ ). Thus,  $H_0 6$  is rejected and confirms significant

alignment with CBN's financial inclusion strategy.

#### Discussion of Findings

The results of this study demonstrate that OPay's mobile banking services play a substantial role in expanding financial inclusion among unbanked and underbanked populations in Nigeria. The regression model, which accounts for 62.3% of the variation in financial

inclusion, confirms that digital platforms are increasingly central to bridging long-standing gaps in access to formal finance. This aligns with Oladeji and Dada's (2021) findings that mobile financial tools contributed to a 40% rise in formal participation among informal workers, and with Uduji and Okolo-Obasi's (2020) observation that mobile banking offered new entry points for rural women previously excluded from the financial system. A key insight from the analysis is that accessibility emerged as the strongest predictor of financial inclusion ( $\beta = 0.282$ ). This reinforces Ibrahim and Yusuf's (2024) argument that digital banking dismantles geographical constraints that typically impede access to traditional banks. In contrast, the divergence from Khan and Jaffar (2021) findings in Pakistan where poor regulatory support undermined mobile banking's impact suggests that Nigeria's comparatively conducive policy environment may amplify the effectiveness of digital platforms.

The study further reveals strong positive associations between OPay's specific services, particularly mobile transfers ( $r = 0.672$ ) and mobile savings ( $r = 0.634$ ), and financial inclusion outcomes. This resonates with Jack and Suri's (2020) evidence from Kenya that mobile money ecosystems expand entry into broader financial products. The importance of transfer services mirrors Olayemi's (2023) claim that peer-to-peer transactions often serve as a "gateway mechanism" into more structured financial behaviours.

Notably, the study contradicts Chima and Ngige (2019), who questioned whether mobile platforms stimulate savings; in OPay's case, the combination of intuitive design and extensive agent support appears to facilitate meaningful saving practices. However, the influence of inhibiting factors remains significant. Digital literacy surfaced as the most critical barrier ( $\beta = -0.312$ ), reaffirming Ibrahim and Lawal's (2023) position that inadequate digital skills hinder adoption of mobile finance. This pattern parallels evidence from Bangladesh (Abdul Azeez, & Jawed Akhtar, 2021) and India (Gupta & Arora, 2022). Trust issues ( $\beta = -0.201$ ) also reduced adoption, echoing prior work on user perceptions of digital financial risks, though OPay's expanding agent network appears to mitigate some of these concerns. Similarly, device limitations ( $\beta = -0.267$ ) support the notion that the digital divide continues to constrain the reach of financial technology.

Comparative analysis shows that OPay retains a significant advantage over traditional banks, especially regarding cost efficiency (mean difference = 1.36). This supports Financial Intermediation Theory, which emphasises reduced transaction costs as a mechanism for enhancing inclusion. The finding aligns with Karanja and Moyo's (2023) results in South Africa, reinforcing the argument that digital-first models reshape the cost structure of financial service delivery. Regulatory findings reveal ongoing tensions. While OPay adheres to key CBN requirements such as KYC, AML, and

consumer protection, the results echo the CBN's (2021) concerns about strengthened oversight of digital finance. The accounting implications align with Ogbonna and Chika's (2019) call for more robust digital finance reporting frameworks to ensure transparency and accountability. The strong alignment with the CBN's National Financial Inclusion Strategy ( $R^2 = 0.695$ ) supports Adewuyi et al. (2022) assertion that mobile banking platforms are essential instruments for national inclusion targets.

The findings strongly reflect the principles of Rogers' Diffusion of Innovation (DOI). OPay's mobile banking features demonstrate relative advantage through lower costs, broader reach, and service efficiency; compatibility with users' everyday financial needs; and increasing observability through widespread agent presence. Nonetheless, barriers in complexity particularly digital literacy deficits remain significant impediments to adoption, consistent with DOI predictions about slowed diffusion in low-literacy environments. Similarly, the results align with the Technology Acceptance Model (TAM). Accessibility and ease of use reinforce perceived usefulness and perceived ease of use, which drive behavioural intention to adopt digital banking. In contrast, trust deficits and device constraints diminish users' perceptions of usefulness, underscoring TAM's claim that favourable technology perceptions are essential for widespread adoption.

The study's evidence underscores that OPay's mobile banking services meaningfully advance financial inclusion in Nigeria by lowering access barriers, expanding service availability, and aligning with national financial strategies. Yet, consistent with DOI and TAM, adoption is shaped not only by the advantages of the technology itself but also by users' ability, confidence, and opportunity to engage with it. The interplay between technological innovation, regulatory support, user readiness, and socio-economic context therefore remains central to the transformative potential of digital finance.

## **5.0 Conclusion**

This study examined how mobile banking enhances financial inclusion in Nigeria, using OPay Digital Banking. Evidence from 300 users across Lagos, Oyo, and Ogun States shows that OPay significantly broadens financial access for unbanked and underbanked populations. Its core services particularly mobile transfers, savings features, and bill payments strongly support participation in the formal financial system, consistent with past research on the transformative role of mobile financial technologies. A key advantage of OPay lies in its accessibility, affordability, and speed, which collectively position it as a more inclusive and cost-effective alternative to traditional banks. The study also finds that OPay maintains compliance with regulatory and accounting standards, particularly in areas such as KYC, consumer protection, and transaction

transparency. Its alignment with the National Financial Inclusion Strategy further strengthens its role in expanding digital payments and supporting small businesses.

Despite these gains, several barriers continue to limit full adoption. Low digital literacy, trust concerns, weak network infrastructure, and the cost of internet-enabled devices remain major obstacles, echoing broader regional challenges. Addressing these issues is crucial for sustaining and deepening mobile-led financial inclusion. To maximise long-term impact, a coordinated approach is required. The Central Bank of Nigeria, OPay, and other FinTech stakeholders should promote community-based digital literacy programmes and strengthen digital trust through awareness campaigns on data privacy and safe mobile transactions. Regulatory bodies should continue using flexible, innovation-friendly mechanisms such as sandboxes to balance consumer protection with technological advancement. More broadly, public and private investment in telecommunications and power infrastructure will be essential for expanding connectivity and enabling mobile banking to reach underserved regions effectively. The findings reaffirm

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that mobile banking when supported by strong regulation, improved digital literacy, and better infrastructure can play a transformative role in closing financial access gaps in Nigeria.

## 6.0 Recommendations

This study adds to our understanding of mobile banking and financial inclusion in Nigeria and Sub-Saharan Africa in three important ways:

- i. It provides one of the first thorough assessments of OPay's role in improving financial inclusion. It goes beyond general studies of mobile banking to show how specific platform models can be customized for greater impact.
- ii. By bringing together the Diffusion of Innovation Theory, Technology Acceptance Model, and Financial Intermediation Theory, the study presents a detailed framework for explaining how mobile banking is adopted and its outcomes in developing economies.
- iii. It offers new evidence on the accounting and regulatory aspects of mobile banking. It clarifies how digital platforms interact with financial systems and oversight mechanisms. It also provides practical insights for policymakers and regulators.

[Journal of Social Studies and Economics](#) 11(2):8-22

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**EFFECT OF OPERATIONAL MANAGEMENT PRACTICES ON PERFORMANCE OF FOOD AND BEVERAGE COMPANIES IN KADUNA STATE.**

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**Abstract**

*This study investigates the impact of operational management practices on the organizational performance of food and beverage companies in Kaduna Metropolis. A sample of 482 respondents from the entire population of large-scale firms participated in the survey method used in the study. Partial Least Squares Structural Equation Modeling (PLS-SEM) approach version 4.0 was employed to examine the relationship between operational management dimensions planning and supervision and organizational performance. Findings reveal that operational management significantly influences organizational performance, with effective planning and supervision serving as crucial drivers of efficiency, productivity, and profitability. Specifically, planning enhances clarity of responsibilities, decision-making, and resource allocation, while supervision promotes motivation, cohesion, and alignment of tasks with strategic objectives. Results further highlight that 77.8% of the variance in performance is explained by operational management, underscoring its central role in achieving sustainable growth. The study concludes that operational excellence, supported by systematic planning and strong supervisory practices, is vital for enhancing competitiveness and long-term survival in Nigeria's dynamic food and beverage sector.*

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**Keywords:** Operational management; Organizational performance; Planning, Supervision and Kaduna State.

## **1.0 Introduction**

In today's highly competitive and globalized business environment, organizational success transcends technical competence, product quality, and market presence. Modern organizations are increasingly evaluated based on their operational efficiency, ethical conduct, accountability, and ability to consistently deliver value to stakeholders. The shift from the traditional manufacturing-driven economy to an information- and service-oriented economy has intensified the importance of effective operational management practices as a driver of organizational performance (Prabhala, 2021; Boyer & Lewis, 2022). Consequently, firms that fail to optimize their operational systems often experience declining productivity, reduced profitability, and weakened competitive advantage.

Operational management practices refer to the systematic planning, organizing, supervising, and controlling of organizational processes to ensure the efficient transformation of inputs into outputs. These practices are particularly critical in labor-intensive industries where human capital, production processes, and inventory systems interact continuously. Empirical evidence suggests that organizations with structured operational planning, effective supervision, efficient product development processes, and robust inventory management systems tend to record superior performance

outcomes, including higher productivity, cost efficiency, customer satisfaction, and market share (Muafi, 2019; Yusuf, 2023).

The food and beverage industry occupies a strategic position in Nigeria's economy due to its role in food security, employment generation, industrial growth, and contribution to Gross Domestic Product (GDP). According to the National Bureau of Statistics (NBS, 2023), the food and beverage manufacturing subsector remains one of the largest contributors to Nigeria's manufacturing output. However, despite its importance, the industry has continued to face significant operational challenges, including rising production costs, supply chain disruptions, inefficient inventory systems, weak production planning, and inconsistent product quality. These challenges have raised serious concerns about the overall performance and sustainability of food and beverage companies, particularly at the sub-national level such as Kaduna State.

Recent industry reports indicate that many food and beverage firms in Nigeria have experienced declining operational efficiency, fluctuating output levels, and reduced profitability due to weak operational management practices (Manufacturers Association of Nigeria [MAN], 2022). Inflationary pressures, energy costs, and logistics constraints have further compounded operational inefficiencies, resulting in lower employee productivity and declining firm

performance (NBS, 2024). In Kaduna State, where several small, medium, and large-scale food and beverage companies operate, these operational challenges are more pronounced due to infrastructural constraints, inconsistent power supply, and limited access to modern production technologies.

Performance, which is the dependent variable of this study, is commonly measured in terms of productivity, profitability, operational efficiency, market share, and customer satisfaction. Financial performance, in particular, reflects the extent to which a firm efficiently utilizes its primary resources to generate income, sustain operations, and achieve overall organizational success, while also creating the capacity to mobilize additional resources for future growth (Gobe, Bello, Mustapha, & Suleiman, 2020). In line with prior studies, financial performance is further conceptualised as the degree to which a firm attains financial efficiency, as reflected in expected returns on production and marketing investments as well as increases in sales volume (Micheels & Gow, 2011; Suleiman, Aliyu, & Bello, 2021).

The importance of firm performance has been widely acknowledged in the literature, given its role in enhancing competitiveness, improving shareholder returns, generating employment, and contributing to overall economic growth (Hameed, Kurfi, & Bello, 2020). However, in contexts characterised by

financial literacy limitations, accounting standard discrepancies, and regulatory exemptions that constrain the disclosure of financial statements, obtaining objective measures of financial performance becomes challenging. Consequently, researchers often rely on subjective or indirect performance indicators (Jogaratnam et al., 1999; Suleiman et al., 2021). Evidence from recent studies further suggests that declining performance in the food and beverage industry is closely associated with weak operational planning, ineffective supervision, poor product development processes, and inefficient inventory management systems (Boyer & Lewis, 2022; Yusuf, 2023). For instance, inadequate production planning frequently results in raw material wastage, delays in order fulfilment, and increased operational costs, while weak supervisory mechanisms reduce employee commitment and overall productivity.

Operational management practices such as planning, supervision, product development, and inventory management are therefore central to reversing performance deterioration in the food and beverage industry. Effective operational planning provides a structured framework for aligning organizational resources with strategic objectives, thereby enhancing workflow efficiency and minimizing operational bottlenecks. Supervision ensures adherence to operational standards, motivates employees, and improves coordination across production units, leading to higher output and

reduced errors (Muafi, 2019). Similarly, efficient product development practices enable firms to respond to changing consumer preferences and market demands, while effective inventory management minimizes stock-outs, reduces holding costs, and enhances production continuity (Yusuf, 2023).

The importance of this study is underscored by the growing need for empirical, quantitative evidence on how operational management practices influence performance outcomes within Nigeria's food and beverage sector, particularly in Kaduna State. While existing studies have examined operations management in manufacturing firms, limited attention has been given to state-level analyses that capture the unique operational realities of food and beverage companies operating in semi-industrialized economies. This study therefore seeks to bridge this gap by quantitatively examining the effect of operational management practices on the performance of food and beverage companies in Kaduna State, using recent data and contemporary analytical techniques.

Despite the food and beverages firms in Nigeria utilizes the procedures or operations to take inputs and make yields that fulfil clients, inadequate market research leads to a lack of understanding of consumer preferences, resulting in the production of goods that may not meet market demands (Schroeder, 2018). Inefficient production planning has led to

overproduction or stockouts, causing disruptions in the supply chain and impacting overall profitability. Poor planning in allocating resources, both human and capital, has led to inefficiencies and increased production costs (Efini, 2019).

Furthermore, the debate in the literature has been inconclusive, for example studies like Clark, (2019); Alymkulova and Seipulnik (2017) agreed that organizational operations have positive impact on employee's commitment and organizational performance. However, Rawlings, (2020); Abdelkarim, (2020) found no significance impact of operations procedures and interactional justice on task performance of the employee. This inconclusive result in the literature is enough pointer that problem still exists as to whether operations management is relevant to employee's performance or not. Hence, a study of this nature becomes relevant. Therefore, this study aims to examine if operational management practices would influence the organizational performance of food and beverage companies in Kaduna metropolis.

### **1.1: Research Questions**

The following questions are formulated to attain the laid objectives.

- i. What is the influence of planning on organizational performance of food and beverage companies in Kaduna metropolis?

- ii. To what extent does supervision influence organizational performance of food and beverage firms in Kaduna metropolis?

### **1.2: Objective of the Study**

The main objective of the study is to examine the effect of operational management on organizational performance of food and beverage companies in Kaduna metropolis. The specific objectives are to;

- i. Examine the influence of planning on organizational performance of food and beverage companies in Kaduna metropolis.
- ii. Examine the extent supervision organizational performance of food and beverage firms in Kaduna metropolis.

## **2.0 Literature Review**

### **2.1 Conceptual Framework**

This sub-section views the different literature of previous scholar in regards to the concept of operations management in the selected dimension which are planning and supervision. Also, the conceptual framework of performance is been operationalized.

#### **2.1.1 Organizational Performance**

Organizational performance refers to the assessment and measurement of how well an organization achieves its goals, objectives, and outcomes. Organizational

performance refers to the ability of an organization to achieve its stated goals and objectives effectively and efficiently (Yusuf, 2023). Yusuf, (2023) define performance as the attained outcomes of actions with skills of employees who perform in some situation.

Organizational performance is the result produced by the efforts of the organization's people and resources. It includes financial measures, market share, customer satisfaction, and other indicators of success (Sadri, 2020). Performance is simply the result of patterns of action carried out to satisfy an objective according to some standards. This means employee performance is a behavior which consists of directly observable actions of an employee, and also mental actions or products such as answers or decisions, which result in organizational outcomes in the form of attainment of goals (Lanre, 2018).

#### **2.1.2 Operation Management**

According to James (2019) operations management is the management of that part of an organization that is responsible for producing goods and/or services. That is, the act of working together successfully means that everyone understands not only their own role, they also understand the roles of others. Operational management practices refer to every procedure or methodological solution which is carried out on the shop floor and which is meant to improve the efficiency of production and logistic processes (Harry, 2019). Operations

management is concerned with the design, management, and improvement of the systems that create the organisation's goods or services. The majority of most organisations' financial and human resources are invested in the activities involved in making products or delivering services.

Operations management is therefore critical to organisational success (Parker, 2021).

### **i). Planning**

Planning is the fundamental management function, which involves deciding beforehand, what is to be done, when is it to be done, how it is to be done and who is going to do it. It is an intellectual process which lays down an organisation's objectives and develops various courses of action, by which the organisation can achieve those objectives. It chalks out exactly, how to attain a specific goal (James, 2019). Planning is nothing but thinking before the action takes place. It helps us to take a peep into the future and decide in advance the way to deal with the situations, which we are going to encounter in future. It involves logical thinking and rational decision making (Muafi, 2019).

Planning is a first and foremost managerial function provides the base for other functions of the management, i.e. organising, staffing, directing and controlling, as they are performed within the periphery of the plans made (Prabhala, 2021). It focuses on defining the goals of

the organisation, identifying alternative courses of action and deciding the appropriate action plan, which is to be undertaken for reaching the goals. It is pervasive in the sense that it is present in all the segments and is required at all the levels of the organisation. Although the scope of planning varies at different levels and departments (Voss, 2021).

### **ii). Supervision**

Supervision is direction, guidance and control of working force with a view to see that they are working according to plan and are keeping time schedule. Further, they are getting all possible help in accomplishing their assigned work. Supervisors are those having authority to exercise independent judgement in hiring, discharging, disciplining, rewarding and taking other actions of a similar nature with respect to employees. Supervision implies guiding and looking after the work of the subordinates so as to ensure that the work is being done according to the norms laid down for the purpose. In this way, the primary objective of a supervisor is to help in getting the production maximised both quality- and quantity-wise (Mehri & Hosseini, 2018).

Supervision is the process by which a supervisor helps the supervisee to adjust to his/her job, to develop team spirit and to assume even greater responsibility. Supervision is the act of 'guiding the workers to develop their self in the best possible manner. It involves motivating, guiding, inspecting, superintending, developing, coordinating and controlling

the subordinates. Supervision refers to the direct and immediate guidance and control of subordinates in the performance of their task (Revelle, 2019).

## **2.2: Empirical Review**

Recent empirical studies have increasingly emphasized the role of operational management practices in enhancing organizational performance, particularly within manufacturing-oriented industries such as food and beverage firms. Contemporary research also highlights innovation as a critical moderating factor that strengthens or weakens the relationship between operational management practices and performance outcomes.

### **2.2.1: Planning and Performance**

Operational planning has been widely recognized as a foundational element of performance improvement in manufacturing firms. Boyer and Lewis (2022) examined the relationship between strategic operational planning and firm performance among manufacturing companies and found that firms with structured planning systems recorded significantly higher productivity, cost efficiency, and delivery reliability. Their findings further revealed that organizations that integrated technological and process innovations into their planning frameworks achieved superior performance compared to firms relying on traditional planning methods. Similarly, Akinwale and George (2021), in a study of Nigerian manufacturing firms, established that effective operational

planning positively influences organizational performance indicators such as output efficiency and profitability. The study further demonstrated that innovation capability measured through process automation and adoption of digital planning tools significantly moderated the relationship between planning and performance, suggesting that innovative firms derive greater performance benefits from operational planning.

In the food and beverage sector, Yusuf, Gunasekaran, and Adeleye (2023) investigated the impact of production planning on operational performance and found that firms with flexible and innovation-driven planning systems were better positioned to manage demand variability and supply chain disruptions. Their results indicated that innovation in planning processes enhances responsiveness, reduces waste, and improves overall firm performance. Inventory management has also been identified as a major determinant of performance in manufacturing firms. According to Eroglu and Hofer (2021), efficient inventory systems positively influence operational and financial performance. However, their study showed that the adoption of innovative inventory technologies such as automated tracking systems and data-driven forecasting tools significantly amplified performance outcomes.

In the Nigerian context, Abdullahi and Sadiq (2023) found that food and

beverage companies that adopted innovative inventory management practices experienced reduced stock-outs, minimized wastage, and improved production continuity. The moderating effect of innovation was evident, as firms using modern inventory technologies achieved better performance compared to those relying on manual systems.

### **2.2.2: Supervision and Performance**

Effective supervision is another critical operational management practice influencing employee productivity and organizational outcomes. Muafi (2019), whose findings remain relevant in contemporary studies, emphasized that supervisory effectiveness enhances employee commitment and operational efficiency. Building on this, recent studies have introduced innovation as a factor that reshapes supervisory practices.

For instance, Lee and Kim (2021) examined supervisory practices in manufacturing firms across emerging economies and found that innovative supervisory approaches such as digital performance monitoring systems and participatory leadership positively moderated the relationship between supervision and organizational performance. Firms that adopted innovative supervision tools reported higher employee productivity, reduced operational errors, and improved performance outcomes.

In a related study, Okorie, Uzonwanne, and Ibrahim (2022) analyzed food and

beverage companies in Nigeria and observed that supervisory effectiveness significantly influenced operational performance. The study further revealed that innovation, particularly in the use of real-time performance tracking technologies and continuous improvement systems, strengthened the impact of supervision on productivity and efficiency.

Product development remains a critical operational function, especially in the food and beverage industry where consumer preferences change rapidly. Adegbesan and Ricart (2020) found that firms with strong innovation-oriented product development processes achieved higher market performance and customer satisfaction. Their study demonstrated that innovation moderates the relationship between product development efficiency and firm performance by enabling faster product adaptation and quality improvement.

More recently, Yusuf and Salami (2024) examined food and beverage firms in West Africa and reported that innovation-driven product development significantly enhanced operational performance and competitive advantage. Firms that invested in innovative processing techniques and product design recorded higher sales growth and operational efficiency than less innovative counterparts.

### **2.3: Synthesis of the Empirical Review and Identified Gap**

The reviewed studies collectively indicate that operational management practices specifically planning, supervision, product development, and inventory management have a significant positive effect on organizational performance. More importantly, recent literature (2020–2025) consistently demonstrates that innovation plays a moderating role by enhancing the effectiveness of these operational practices. Firms that integrate technological, process, and managerial innovations into their operations tend to achieve superior performance outcomes.

However, despite the growing body of literature, empirical studies that simultaneously examine the moderating role of innovation in the relationship between operational management practices and performance within food and beverage companies at the state level in Nigeria remain limited. This study therefore seeks to fill this gap by quantitatively analyzing how innovation moderates the effect of operational management practices on the performance of food and beverage companies in Kaduna State.

### **2.4: Theoretical Framework**

The systems theory was published by Kuhn, (1974) and states that a system is characterized  
this study is anchored on Systems Theory and Dynamic Capabilities Theory, which jointly explain how operational management practices influence

organizational performance and how innovation moderates this relationship in food and beverage companies in Kaduna State.

#### **2.4.1: Systems Theory**

Systems Theory, originally advanced by von Bertalanffy and later applied to organizational studies by scholars such as Kuhn (1974), views organizations as open systems made up of interrelated and interdependent components that interact with one another and with the external environment. The theory posits that no component of an organization operates in isolation; rather, the performance of the entire system depends on the effective coordination and interaction of its subsystems.

In the context of this study, food and beverage companies are conceptualized as systems comprising interconnected operational units such as planning, supervision, product development, inventory management, and human resources. According to Systems Theory, inefficiency or failure in any of these operational components negatively affects overall organizational performance. Conversely, effective coordination among these operational management practices enhances productivity, efficiency, and competitiveness.

The theory further emphasizes the importance of open systems, where organizations continuously interact with their environment by receiving inputs, transforming them through operational processes, and releasing outputs, while

also receiving feedback. Innovation plays a crucial role in this interaction by enabling firms to adapt their operational systems to changing market demands, technological advancements, and competitive pressures. Thus, Systems Theory provides a strong theoretical foundation for understanding how operational management practices collectively influence performance in food and beverage companies.

#### 2.4.2: Dynamic Capabilities Theory

Dynamic Capabilities Theory, as advanced by Teece (2014), explains how firms integrate, build, and reconfigure internal and external competencies to address rapidly changing environments. Unlike ordinary capabilities, which reflect routine operational efficiency, dynamic capabilities enable organizations to adapt, innovate, and sustain competitive advantage over time.

In this study, operational management practices such as planning, supervision, product development, and inventory management represent organizational capabilities that directly influence performance. However, Dynamic Capabilities Theory argues that the

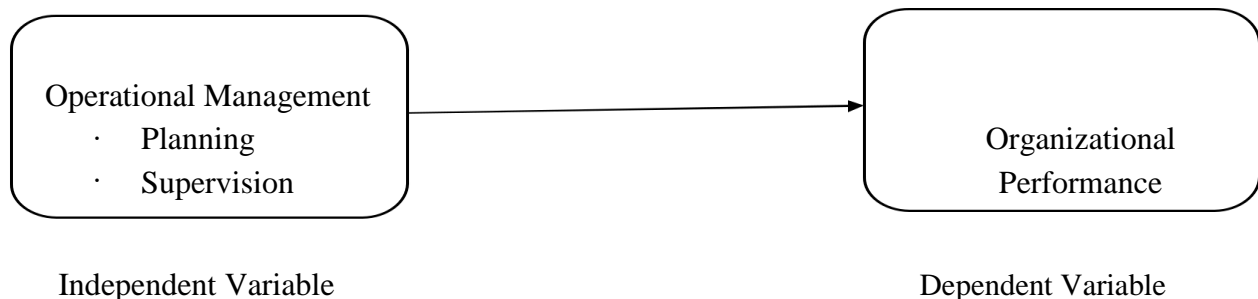
effectiveness of these practices depends on the firm's ability to innovate and reconfigure its operations in response to environmental changes. Innovation, therefore, acts as a higher-order capability that strengthens the impact of operational practices on performance.

For food and beverage companies operating in a highly competitive and volatile environment, innovation in production processes, supervisory methods, planning systems, and inventory technologies enhances responsiveness, efficiency, and market performance.

#### 2.5: Relevance of the Theories to the Study

Systems Theory explains the **interdependence** between operational management practices and organizational performance, while Dynamic Capabilities Theory explains how innovation enhances and strengthens this relationship. Together, the theories provide a robust framework for analyzing how coordinated operational practices, supported by innovation, improve the performance of food and beverage companies in Kaduna State.

#### 2.6: Conceptual Framework



### 3.0 Methodology

This section presents the procedure to be employed for the collection and analysis of data relevant to the investigation. The study adopts the survey and cross-sectional research design for this study. The research design enabled the researcher to make assessment of the performance of food and beverages as well as analyze their

views and opinion on the impact of operation management. The population for this study was the total staff of the listed large-scale food and beverages firms in Kaduna metropolis. For the purpose of this research, permanent staff of the company were selected. The population of the study comprises of all the permanent staff as at 2<sup>nd</sup> March, 2025

**Table 1: List large-scale Food and Beverage Companies in Kaduna State, Nigeria, Manufacturing Association of Nigeria.**

S/ N	Company Name	Sector	Location
1	Arla Foods Nigeria	Food (Dairy)	Kaduna
2	Niyya Farm Group Limited	Food (Juices & Yogurt)	Kaduna
3	Crown Flour Mill	Food (Grain Processing)	Tudun Wada, Kaduna
4	JJB Foods and Processing Limited	Food (Processing)	No. 5 Doka Street, Sabo, Kaduna
5	Nikoy Nigeria Limited	Food (Grain Processing)	Kudenda Industrial Estate, Kaduna
6	Mami Seeds Oil Limited	Food (Vegetable Oils)	Katuru Road, Along Kaduna Airport
7	Nagari Seeds Nigeria Limited	Food (Seeds)	Sokoto Road, GR A, Zaria, Kaduna
8	Cool-me Beverages Limited	Beverage	Kaduna

	d		
9	Deekwambos Limited Nigeria	Food	B126 Kazaure Road, Sardauna Crescent, Kaduna
10	Oxen Foods	Food	Plot 2 Jemaa Road, FHE, Gonin-gora, Kaduna
11	Nigerian Breweries Plc, Kaduna	Beverage	Makera Road, Kaduna
12	North ern Noodles Limited	Food (Noodles)	NNP Industrial Layout, No. 168 Kachia Road, Sabo, Kaduna
13	Pepsi Co (Seven-Up Bottling Co.)	Beverage	PepsiCo Complex, Kaduna
14	Zazzau Foods Ltd	Food	Rigas Industrial Layout, Kaduna
15	Dangi Foods Limited	Food	No. 18 Abubakar Kigo Road, Kaduna
16	Arewa Bottling Company	Beverage	Arewa Industrial Area, Kaduna
17	Cway Food & Beverages Nigeria Co. Ltd.	Beverage	Kachia Road, Kaduna

**Source:** Manufacturing Association of Nigeria, 2024.

A sample is a part or subset of people, items, or events from a larger population that one collects and analyzes to make inferences. The sample size of the study was chosen based on the selection criteria. Companies that those not meet the criteria will be excepted from the study.

The following criteria are:

- i. Those companies that are not operating within Kaduna metropolis.
- ii. Those companies that have not being operational for over a decade.
- iii. Those companies that produces only grains, animal feeds, seeds and oil.

iv. And those companies that are only into processing and not production are excepted.

Therefore, the sample population are

**Table 2: Sample Size**

S/N	Company Name	Sector	Number of Employees
1	Arla Foods Nigeria	Food (Dairy)	276
a2	Niyya Farm Group Limited	Food (Juices & Yogurt)	118
3	Cool-me Beverages Limited	Beverage	178
4	Deekwambos Nigeria Limited	Food	182
5	Oxen Foods	Food	78
6	Nigerian Breweries Plc, Kaduna	Beverage	300
7	Northern Noodles Limited	Food (Noodles)	146
8	PepsiCo (Seven-Up Bottling Co.)	Beverage	326
9	Zazzau Foods Ltd	Food	63
10	Dangi Foods Limited	Food	54
11	Arewa Bottling Company	Beverage	89
12	Cway Food & Beverages Nigeria Co. Ltd.	Beverage	258
TOTAL			2,662

The target population of the study are permanent staff of the selected large-scale food and beverages companies in Kaduna metropolis of Kaduna state. Therefore, the sample population of the study is estimated using Taro Yamane (1976) sampling formula. As a result of the inability of the researcher to effectively study the whole seller's strength population, a representative number was chosen as the sample size population. Three hundred and forty-eight (348) was used as the sample size. The sample size was calculated using the Taro Yamane scientific formula which is given as:

For the purpose of increased representation, 30% of the sample size as

recommended by Israel (2013) was added bringing the total to 393 ( $302 \times 30\% = 348 \times 0.3 = 384 + 104 = 452.4$  or 452). This takes care of other unavoidable errors such as incorrect filling and failure of some respondents to return questionnaire. The copies of questionnaire were distributed personally to the participating respondents of the study using simple random sampling. However proportionate sampling was used to reach the total copies of questionnaires to be given to each selected manufacturing firm. Data were collected using a structured questionnaire administered to employees of selected food and beverage manufacturing companies in Kaduna State. All constructs were measured using

a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree, which is suitable for PLS-SEM analysis. The use of previously validated instruments enhances the robustness and comparability of the findings.

Data collection is an important aspect of this study. The method for collecting data was primary data method of collection. For the purpose of this study, data was sourced from primary sources. The primary data consist of structured questionnaires designed to provide the necessary and accurate information for this research. These analyses were conducted using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach.

**Planning (PL):** Five (5) questions were adapted from the study of Eshiett, (2022)

**Supervision (SV):** Five (5) questions were adapted from the study of **Martin, (.2005)**

**Organisational Performance (OP):** Five (5) questions were adapted from the study of Spillan and Parnell, (2006)

#### 4.0: Data Analysis and Presentation of Results

##### 4.1: Missing Value Analysis

From the raw SPSS database, 7 randomly missing items were imputed for the observed indicators, OP1 (2) PL1 (4), PL3, SV1, and SV2. (Schafer, 1999; Tabachnick & Fidell, 2007) Scholars generally agree that a missing value rate of 5% or less is not significant. A collection of data's percentage of missing values that allow for trustworthy statistical inference is not set in stone, nevertheless. Additionally, experts advise that if the overall percentage of missing data is less than 5%, mean substitution is the simplest method to replace missing values (Tabachnick & Fidell, 2007).

**Table 3: Missing Values by Variable**

Constructs	Code	Missing	Percentage	Total Missing
<b>Organisational Performance</b>	OP1	2	0.5	
	OP2	0	0	
	OP3	2	0.5	
	OP4	0	0	
	OP5	0	0	
<b>Planning</b>	PL1	4	1.0	5
	PL2	0	0	
	PL3	1	0.3	
	PL4	0	0	
	PL5	0	0	
<b>Supervision</b>	SV1	1	0.3	2
	SV2	1	0.3	
	SV3	0	0	
	SV4	0	0	
	SV5	0	0	

Source: SPSS Output (2025)

**4.2: Assessment of Outliers**

The Mahalanobis distance (D2) method measures the distance of each observation in multidimensional space from the mean centre of all observations, producing a single result for each observation regardless of the number of variables included (Hair, Black, Babin & Anderson 2014). In this study, outliers were identified using the Mahalanobis distance (D2) at the 0.001 level of significance. Outliers were found in 15 cases (6, 29, 41, 62, 63, 77, 127, 137, 161, 194), which were subsequently removed, limiting the analysis to the 405 remaining data points.

**4.3: Common Method Bias**

In order to guarantee proper scale reliability, convergent validity, and to

promote confidence in the study findings, precautionary procedural and statistical steps were taken to minimise potential method variance because the study data are reliant on self-reports. During data collection, the scale items from the survey were combined at random. The research also looked for common method variance in the data analysis. No one factor stood out, according to the findings of an exploratory factor analysis (EFA) that took into account all of the significant variables. Furthermore, the 'forced' single-factor solution only explained 36.4% of the variation, which is less than the suggested 50% criterion (Podsakoff et al., 2003). This indicates that CMV was not a significant issue in this study.

**Table 4: Summary**

Component	SS Loadings	% of Variance	Cumulative %
1	12.6	36.408	36.408

Source: SPSS Output (2025)

**4.4: Correlation Matrix**

Table 5 displays the Pearson correlation coefficient results for the study's variables.

**Table 5: Correlation Matrix**

Constructs	PL	SV	OP
PL	1		
SV	0.880	1	
OP	0.638	0.635	1

Source: SPSS Output (2025)

The degree of relationship between independent variables and the dependent variable is assessed using the correlation matrix. In order to determine the potential for multicollinearity among the explanatory factors, it is also utilised to determine whether a link exists between

the independent variables themselves. Regressing versus performance separately would not have given us the full picture, thus this is required.

The relationship between the independent and dependent variables is displayed in the correlation matrix. The result of 0.880

indicates a comparatively positive association between the supervision (SV) and planning (PL). Furthermore, the result of 0.638 indicates a comparatively positive association between organisational performance (OP) and planning (PL). A correlation coefficient of 0.635 indicates a relatively favourable relationship between organisational performance (OP) and supervision (SV), while a correlation coefficient of 0.689 indicates a relatively favourable relationship between organisational performance (OP).

**4.5: Indicator Multicollinearity**

Variables in an idea may be multicollinear, which is characterised by a strong correlation between them (Gaur & Gau, 2006). The Variance Inflation Factor (VIF) can be used to assess the indicators' multicollinearity (Fornell & Bookstein, 1982). To check for multicollinearity, this study also used VIF (Kothari & Garg, 2014). Kothari and Garg (2014) state that a VIF figure greater than 5 indicates significant multicollinearity. According to Table 4.3.5 II, each indicator's VIF value is below the allowed level. Thus, multicollinearity is no longer a problem in this study.

**Table 6: Multicollinearity Statists (VIF) for indicators.**

ITEMS	VIF
OP1	1.423
OP2	1.738
OP3	1.626
OP4	1.305
OP5	1.422
PL1	1.414
PL2	2.786
PL3	1.772
PL4	1.127
SV1	2.298
SV2	2.237
SV4	1.285

**Table 7: Descriptive Statistics of Variables**

Variable	Sample	Mean	Std. Deviation
PL	405	3.05	0.849
SV	405	2.62	0.810
OP	405	1.94	0.638

Source: Smart-PLS Output (2025)

**4.6: Descriptive Statistics of Variables of the Study**

The descriptive statistics for the study's variables are shown in Table 5.1. These include planning, supervision and organisational performance. A five-point Likert scale was used to measure each study variable. According to Table 4.4, the standard deviation for planning was 0.849 and the mean response was 3.05

respondents moderately agreed with comments regarding planning. Respondents agreed that their supervision is above average since they somewhat agreed with remarks about it (2.62 and 0.810). Respondents agreed that their organisational performance is above average since they agreed with remarks about it as the mean show a score of 1.94 and 0.638.

**Table 8: Item Loadings, Internal Consistency, and Average Variance Extracted for First Order Construct**

<b>Constructs</b>	<b>Indicators</b>	<b>Loadings</b>	<b>Cronbach's Alpha</b>	<b>Composite Reliability</b>	<b>AVE</b>
<b>Organisational Performance</b>	OP1	0.788	0.780	0.849	0.532
	OP2	0.772			
	OP3	0.599			
	OP4	0.720			
	OP5	0.752			
<b>Planning</b>	PL1	0.854	0.755	0.847	0.585
	PL2	0.809			
	PL3	0.598			
	PL4	0.773			
<b>Supervision</b>	SV1	0.869	0.776	0.870	0.694
	SV2	0.726			
	SV4	0.897			

Source: Smart-PLS Output (2025) AVE= Average Variance Extracted

All indicators have loadings greater than 0.60, as seen in Table 5.2, indicating item dependability when evaluating their corresponding reflective latent components.

**4.7: Internal Consistency Reliability of Reflective Model**

This discussion focusses on the extent to which different items or variables evaluate the same reflective latent

concept (Sun et al., 2007; Bijttebier et al., 2000). Internal consistency is often assessed using the Cronbach's alpha coefficient (Cronbach, 1951; Cronbach & Shavelson, 2004). It offers a reliability evaluation based on the correlations between variables. Despite being widely used, the alpha coefficient has drawn criticism for underestimating the reliability of internal consistency and for being sensitive to the amount of variables

in a construct. As a result, the Composite Dependability (CR) criterion was proposed, which is particularly useful in SEM (Hair et al. 2014; Peterson & Kim 2013; Bacon, Sauer, & Young 1995).

Therefore, Cronbach's alpha and composite dependability have a range of 0 to 1, with bigger values denoting greater reliability. Composite reliability scores between 0.845 to 0.872 are considered acceptable and satisfactory (Hair et al., 2017). Values above 0.95, on the other hand, are undesirable since they indicate that all of the indicator variables are measuring the same thing, which casts doubt on their ability to accurately reflect the construct (Hair et al., 2017).

Table 4.5.2 above shows that organisational performance is associated with a CR of 0.849 and a Cronbach's alpha of 0.780, planning had a Cronbach's alpha of 0.755 and a CR of 0.847. Lastly, supervision had a Cronbach's alpha of 0.776 and a CR of 0.872. According to the previously stated maxim that CR values of 0.60 and above are acceptable, it has been determined that all of these constructs are reliable because their individual composite reliability values are all higher than the cut-off of 0.60 and fall

below the problematic value of 0.95. Furthermore, it can be said that each construct's Cronbach's alpha is reliable because the results surpass the predefined cut-off requirement of 0.70. Consequently, it was concluded that all of the constructs were trustworthy after investigating Composite dependability and Cronbach's alpha.

**4.9: Discriminant Validity**

The Fornell-Larcker criterion is the first methodology used in this study. According to this approach, if a reflective construct's square root of AVE is higher than its correlation with any other reflective construct in the same model, it is said to have discriminant validity (Fornell & Larcker, 1981). This approach states that if a latent reflective construct's square root of AVE is greater than its correlations with other reflective latent constructs, it shares more variance with associated indicators than it does with any other latent construct in the model. This reflecting design differs from other structures as a result (Hair et al., 2014). According to this criterion, as indicated in table 4.5.5a, every reflective latent construct in this investigation has attained discriminant validity.

**Table 9: Discriminant Validity (Fornell-Larcker Criterion)**

<b>Constructs</b>	<b>OP</b>	<b>PL</b>	<b>SV</b>
<b>OP</b>	0.729		
<b>PL</b>	0.609	0.765	
<b>SV</b>	0.537	0.618	0.833

Source: Smart-PLS Output (2025)

Table 5.3a, each reflecting latent variable in this study exhibits discriminant validity, meaning that the square roots of its distinct AVEs are greater than the correlations with other variables. For a reflective latent variable to have discriminant validity when using the cross-loadings approach, its loadings for each of its indicators must be greater than

their corresponding loadings (cross-loadings) on other constructs. Cross loading is often seen as a very forgiving criterion for demonstrating discriminant validity (Hair et al., 2011). Consequently, an assessment of the discriminant validity based on the cross-loadings criterion is given in Table 4.5.5b.

**Table 10: Discriminant Validity (Heterotrait-Monotrait Ratio (HTMT))**

<b>Constructs</b>	<b>OP</b>	<b>PL</b>	<b>SV</b>
<b>OP</b>			
<b>PL</b>	0.766		
<b>SV</b>	0.645	0.795	

Source: Smart-PLS Output (2025)

As can be seen in Table 5.3c, the HTMT statistics are presented using correlations between the items of the reflective constructs. Since the HTMT value is below the 0.85 threshold suggested by this study (Kline, 2011), all reflecting latent variables exhibit discriminant validity; only one relationship between goes

beyond the hreshold that is OP and IV, but does not pose a problem for the model. To support the conclusion in the table, the HTMT confidence intervals are shown in table 4.5.5d below to further proved that HTMT is not an issue in this study.

**Table 11: Heterotrait-Monotrait Ratio (HTMT) Confidence Intervals**

<b>Relationship</b>	<b>Mean</b>	<b>2.5%</b>	<b>97.5%</b>
<b>PL -&gt; OP</b>	0.609	0.542	0.671
<b>SV -&gt; OP</b>	0.281	0.250	0.312

Source: Smart-PLS Output (2025)

Table 5.3d above displays the confidence interval for the HTMT finding along with the lower (2.5%) and upper (97.5%) confidence levels. Based on the upper

confidence values, one may argue that discriminant validity has been established because none of the values are higher than the cut-off of 0.85. Stated otherwise, there

is a significant variation among all HTMT values about the HTMT inference criterion. Discriminant validity has been shown because there is a high association between all of the study's latent constructs and none of them are substantially different from one another. Therefore, the discriminant validity was checked using the Fornell-Larcker criterion, cross loadings, and the HTMT criterion. It is adequate to state that, when applied to all techniques, all of the study's latent

reflective latent constructs exhibit discriminant validity.

#### 4.10: Hypotheses Testing

The results of the structural model based on the causal relationships between the study's criteria variables and predictors are also displayed in Table 12 below. These results are interpreted using the t-value, standard error (SE), and coefficients (Beta) of the path connection. (T Statistical). At the 5% level, the hypothesis' significance was assessed.

**Table 12: Hypotheses test for direct and moderating relationship**

R/Ship	Beta Values	Std. Dev.	T Statistics	P Values	Decision
OM -> OP	0.692	0.016	37.590	0.000	Reject

Source: Smart-PLS Output (2025)

Operational Management (OM) has significant influence on Organisational Performance (OP) of food and beverage firms in Kaduna metropolis. It is seen on Table 12, that Operational Management is significantly related to Organisational Performance with ( $\beta = 0.692$ , T- stat = 37.590,  $p < 0.000$ ). Therefore,  $H_0^1$  Operational management has no significant influence on organizational

performance of food and beverage firms in Kaduna metropolis is empirically rejected.

#### 4.11: Coefficient of Determination: R-Squared

The coefficient of determination, or R-square level, was used to analyse the amount of variance that the external latent variables explained on the endogenous latent variables.

**Table 13: Coefficient of Determination: R-Squared**

Construct	R Square
OM	0.995
OP	0.778

Source: Smart-PLS Output (2025)

Table 13 shows that 77.8% (0.778) of the variation in operational management may be attributed to planning, and supervision, while, 99.5% (0.995) of the variation in organisational performance may be attributed to operational management. According to Chin's (1998) recommendation that R2 values of 0.67, 0.33, and 0.19 be assessed as substantial, moderate, and weak, respectively, the R2 value explained by these latent variables on the target endogenous latent variable is therefore substantial.

**4.12: Assessment of the Effect Size: F-Squared**

According to Hair, Ringle, and Sarstedt (2013), the effect size ( $f^2$ ) need to be assessed subsequent to the endogenous latent variables'

coefficient of determination. The effect size is the difference in R2 between the main effects when one exogenous latent variable is included in the model and when it is also removed. This is often done to test whether the endogenous variable is significantly affected by the external latent variable that was left out (Hair et al., 2013). Thus, the effect size of the exogenous latent variable might be calculated using the following formula (Cohen, 1988, et al., 2012).

According to Hair et al (2013) advice, the formula above  $f^2$  values of 0.02, 0.15, and 0.35 indicated Small, Moderate, and Substantial effects, respectively (Cohen, 1988). For the effect size, refer to Table 6.2.

**Table 14: Determination of the Effects Size; F-Square ( $f^2$ )**

Constructs	$f^2$	Effect Size
PL -> OP	0.090	Small
SV -> OP	0.057	Moderate

Source: Smart-PLS Output (2025)

The effect of operational management on organisational performance is displayed in Table 6.2. The exogenous variables that have a minor effect on operational management which include inventory, product development, planning and supervision. According to Cohen's (1988) criteria for effect size interpretation, the results also suggest that the effects of these four exogenous

latent variable on operational performance can be categorised as small, moderate, and substantial, respectively.

**4.13: Assessment of Predictive Relevance: Q-Squared**

As a measure of prediction accuracy, researchers are advised to look at Stone-Geisser's Q2 value in addition to

the R2 value level (Geisser, 1974; Stone, 1974). The predictive utility of a model is measured by this criterion (Hair et al., 2014). But according to Stone (1974) and Duarte and Roposo (2010), this criterion can be seen as an extra assessment of the model fit in the PLS-SEM analysis. Consequently, the Q2 shows how well the model and its parameter estimations produce the observed values (Chin, 1998).

This work employed a cross-validated redundancy criteria to examine the predictive relevance (Q2) of the exogenous latent variables on the reflective endogenous latent variable (Hair et al., 2014; Hair, Ringle, & Sarstedt, 2013; Ringle et al., 2012; Stone, 1974). Accordingly, if the Q2 is larger than zero, the model is deemed

to have predictive value (Henseler et al., 2009); the higher the Q2, the more predictively relevant the model is (Duarte & Roposo, 2010). The blindfolding method was used to determine the Q2 value, which is shown in Table 6.3.

The capacity of the external latent variables to predict the endogenous latent variable was also evaluated using Stone-Geisser's Q2 value in this model (Geisser, 1974; Stone, 1974). A cross-validated redundancy criterion was applied to measure the predictive relevance (Q2) using the blindfolding procedure. Table 6.3 presents the findings to be as OM with a Q2 value of 0.348 and OP with Q2 value of 0.405.

**Table 15: Predictive relevance on endogenous variables: Q-square**

<b>Construct</b>	<b>Q<sup>2</sup> (=1-SSE/SSO)</b>
<b>OM</b>	0.348
<b>OP</b>	0.405

Source: Smart-PLS Output (2025)

**4.14: Discussion of the Findings**

The study that was conducted to investigate the relationship between operational management and organisation performance of food and beverage companies in Kaduna metropolis. Firstly, HO1: Operational management has no significant influence on organisational performance of food and beverages

companies in Kaduna Metropolis. Analysis of the collected data revealed that operational management has significant influence on organisational performance with a Beta coefficient of 0.692 and a p-value of 0.000. This signifies that operational management has significant influence on organisational performance of food and beverages companies in Kaduna

metropolis as described by t-statistics of 37.590 and STDEV value of 0.016. The findings have no correlated with the hypothesis (HO1), which is therefore rejected by the study.

The finding of this study implies that improving the performance of food and beverage companies in Kaduna Metropolis requires the use of efficient operational management techniques. This implies that in order to increase productivity and profitability, businesses should give top priority to tactics such effective resource allocation, process optimisation, quality control, and supply chain management. It also emphasises

how crucial it is to spend in infrastructure, technology, and management expertise in order to maintain competitive advantage and corporate expansion. Legislators and company owners could also think about enacting regulations and educational initiatives that improve operational effectiveness.

For business leaders, this suggests the need to create a culture of continuous improvement and invest in innovative solutions to complement operational strategies. Policymakers and industry stakeholders can also play a role by promoting an atmosphere that supports research, development, and technological breakthroughs within the sector.

**Table 16: Summary of test of hypothesis**

<b>S/ N</b>	<b>NULL HYPOTHESES</b>	<b>REMARK</b>
1	Ho1: Operational management has no significant influence on organizational performance of food and beverage firms in Kaduna metropolis.	Rejected

The test of hypothesis using PLS-SEM analysis found that; operational management has a significant influence on organisational performance of food and beverages companies in Kaduna metropolis.

This study examined the effect of operational management practices on the performance of food and beverage companies in Kaduna Metropolis, with innovation serving as a moderating variable. Drawing from empirical analysis, the study concludes that

operational management practices are critical determinants of organizational performance in the food and beverage industry.

The findings reveal that effective planning and supervision significantly enhance organizational performance by improving efficiency, reducing operational costs, and ensuring consistent output quality. Structured planning enables firms to allocate resources optimally and anticipate operational challenges, while effective supervision enhances employee

productivity, coordination, and adherence to operational standards. These findings align with Systems Theory, which emphasizes that organizational performance is a function of the effective interaction and coordination of interdependent subsystems.

### **5.0: Conclusion**

The study concludes that operational management in terms of effective

planning and supervisions strengthens the organizational performance of food and beverages businesses. Firms that integrate in to their operational processes through improved methods, technologies, and managerial practices achieve superior performance outcomes compared to firms that rely solely on traditional operational approaches.

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## DIGITAL TRUST AND CONSUMER BEHAVIOR IN HIGH-RISK MARKETS: EVIDENCE FROM NORTHWEST NIGERIA

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### Abstract

*This study investigates how consumer trust is constructed and operationalized in digital markets under chronic insecurity, focusing on mobile commerce (m-commerce) in Nigeria's banditry-affected Northwest. Drawing on institutional voids' theory and digital trust frameworks, the research addresses a critical gap in marketing literature: the lack of consumer-centered empirical analysis in violently contested environments. Using a sequential explanatory mixed-methods design, data were collected from 420 consumers and 48 focus group participants across Zamfara, Katsina, and Kaduna states between January and April 2025. Quantitative analysis via structural equation modeling reveals that perceived insecurity significantly erodes digital trust ( $\beta = -0.41, p < 0.001$ ), yet this effect is powerfully offset by social verification cues—such as community referrals, religious signaling, and local identity markers—which emerge as the strongest predictor of trust ( $\beta = 0.58, p < 0.001$ ). Crucially, digital trust fully mediates the relationship between SME marketing engagement and purchase intention (indirect effect = 0.39, 95% CI [0.31, 0.47]), confirming its pivotal role in market functionality. Qualitative findings further demonstrate that consumers rely on informal, socially embedded mechanisms rather than technical platform features to assess seller credibility. These results challenge the universality of Western-centric digital marketing models and extend institutional voids theory to consumer behavior, showing that in fragile contexts, trust is conferred through social legitimacy, not coded into technology. The study concludes with actionable, context-specific recommendations for SMEs, fintech firms, and policymakers to foster resilient digital economies in high-risk settings.*

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**Keywords:** Digital trust, consumer behavior, institutional voids, mobile commerce, social verification cues, high-risk markets.

### 1. Introduction

In recent years, Nigeria's Northwest region—made up of Jigawa, Kaduna, Katsina, Kebbi, Sokoto, and Zamfara states—has become the center of an ongoing security crisis driven by armed banditry. Once known for farming, cross-border trade, and small businesses, the

area now faces frequent violence, large-scale displacement, and the breakdown of local markets and institutions (International Crisis Group, 2023; SBM Intelligence, 2024). According to the Armed Conflict Location & Event Data Project (ACLED, 2024), more than 60% of all violent incidents in Nigeria in 2023

occurred in this region—more than in the Northeast, which had previously seen the highest levels of violence linked to Boko Haram. This shift signals not just a spread of conflict, but the rise of a new kind of instability rooted in weak governance, competition over resources, and the absence of trusted institutions (Ibaba & Ukiwo, 2023; Okechukwu & Eze, 2024).

In this challenging environment, small and medium enterprises (SMEs)—which make up over 90% of businesses and employ most of the region’s non-farm workers (SMEDAN, 2023)—have had to find new ways to survive. With physical markets often closed, roads too dangerous to travel, and banks pulling out of high-risk areas (World Bank, 2023), many entrepreneurs have turned to digital tools like WhatsApp, Instagram, and mobile money to stay connected with customers and keep selling their goods. For them, digital commerce isn’t just convenient—it’s often the only option.

But digital selling only works if customers feel safe and confident enough to buy. In places where fraud, fake sellers, and threats are common, people can’t rely on the usual signs of trust—like secure payment icons, customer reviews, or brand logos—because these assume a stable legal system that can punish bad behavior (Gefen et al., 2003; Pavlou, 2003). Most marketing theories, such as those on online trust or technology use (e.g., Davis, 1989; Morgan & Hunt, 1994), were developed in stable settings where laws are enforced, infrastructure

works, and consumers feel protected. These assumptions simply don’t hold in conflict-affected areas like Nigeria’s Northwest.

This raises important questions: How do people decide whether to trust a seller online when there’s no police to call or courts to turn to? What kinds of signals—like a recommendation from a neighbor, the use of religious greetings, or speaking in a local language—help build that trust? And does this trust actually lead to real purchases, or does fear of violence still stop people from buying?

To answer these questions, this study looks at mobile commerce (m-commerce) among consumers in three of the hardest-hit states—Zamfara, Katsina, and Kaduna—between January and April 2025. Using ideas from institutional voids theory (Khanna & Palepu, 2010) and digital trust research (Gefen et al., 2003), we test three key ideas:

- (i) that feeling unsafe reduces trust in digital sellers;
- (ii) that informal social cues—like community referrals, religious expressions, or local identity—help build trust; and
- (iii) that this digital trust is what actually links a seller’s online activity to a customer’s decision to buy.

By focusing on real consumer experiences in one of Africa’s most unstable economic zones, this research not only fills a gap in marketing literature but also offers

practical insights for small businesses, tech companies, and policymakers who want to support safe and inclusive digital markets—even in the most difficult conditions.

## **2. Literature Review**

### **2.1. Theoretical Foundations: Reconciling Digital Trust and Institutional Voids**

Two theoretical traditions are essential to understanding consumer behavior in high-risk digital markets: digital trust theory and institutional voids theory. Mainstream digital trust models—such as those by Gefen et al. (2003) and Pavlou (2003)—define trust as a consumer’s belief in a seller’s credibility, benevolence, and integrity in online environments where face-to-face cues are absent. These models, often embedded within broader frameworks like the Technology Acceptance Model (Davis, 1989) or Trust-Commitment Theory (Morgan & Hunt, 1994), assume a baseline level of institutional reliability: functioning courts, fraud detection systems, enforceable contracts, and consumer protection laws.

However, this assumption breaks down in conflict-affected regions. In such settings, digital platforms operate not in a “neutral” technical space but within ecosystems marked by institutional collapse. This is where institutional voids theory (Khanna & Palepu, 2010) becomes indispensable. The theory posits that in fragile or emerging economies, formal market-supporting institutions are absent or

nonfunctional, compelling actors to develop informal substitutes—such as ethnic networks, religious affiliations, or community reputation systems—to enable exchange. Yet, while this framework has been applied extensively to entrepreneurship and firm strategy, it has rarely been extended to consumer decision-making in digital contexts.

Critically, the integration of these two theories remains underdeveloped. Digital trust models presume institutional scaffolding; institutional voids theory explains its absence—but neither alone can explain how trust is actually constructed by consumers when digital platforms offer no legal recourse. This conceptual disconnect demands a rethinking of digital trust not as a technical or perceptual outcome, but as a socially negotiated process rooted in local legitimacy.

### **2.2. Empirical Evidence: What We Know—and What We Don’t—About Digital Trust in Fragile Contexts**

Recent empirical studies in conflict-affected regions begin to illuminate alternative trust mechanisms, yet they reveal consistent limitations that justify the need for this study.

In Syria, Al-Hariri and El-Sakka (2023) documented how displaced entrepreneurs use WhatsApp not for its security features, but because it enables kinship networks to vouch for sellers. Similarly, the World Bank (2022) found that in Afghanistan, consumers rely on mosque-based referral chains to verify mobile

vendors—trust flows through religious leaders, not star ratings. In Colombia, Bebbington et al. (2022) showed that rural digital marketplaces only succeed when integrated with local peace committees that screen sellers and resolve disputes, effectively serving as informal regulators.

These studies collectively demonstrate that social capital substitutes for institutional capital in fragile digital markets. However, they suffer from three critical shortcomings:

i. Supply-side orientation: Nearly all focus on entrepreneurial adaptation—how sellers navigate insecurity—while offering minimal insight into consumer cognition. For instance, Al-Hariri and El-Sakka (2023) analyze seller strategies but do not measure how consumers interpret or act on social signals. This leaves untested whether such cues actually influence purchase decisions.

ii. Descriptive rather than causal: Reports by the UNDP (2023) and World Bank (2023) catalog digital usage patterns but lack statistical modeling of relationships (e.g., between trust and purchase intention). Without mediation or moderation analyses, they cannot explain how trust operates as a mechanism.

iii. Contextual specificity without generalization: While Okechukwu and Eze (2024) compellingly show that Nigerian sellers use Islamic greetings (“Assalamu alaikum”) to signal moral reliability, they do not develop or validate measurable constructs for these cues.

Consequently, their findings remain anecdotal rather than theoretically scalable.

Even region-specific evidence from Nigeria—such as Adeyemi and Ogunleye’s (2024) observation that women in Katsina rely on WhatsApp groups moderated by elders—confirms the salience of social verification but stops short of testing its predictive power. Similarly, Afrobarometer (2023) data reveal that 68% of respondents in high-violence West African districts trust personal referrals over online reviews, yet this finding is presented in isolation, disconnected from behavioral outcomes.

Together, these gaps reveal a persistent disconnect: while scholars acknowledge that trust in fragile contexts is socially embedded, no study has empirically modeled how these social signals translate into digital trust and, ultimately, purchase behavior among consumers.

### **2.3. Conceptualizing Social Verification Cues: Beyond Conventional Trust Signals**

Against this backdrop, we propose social verification cues as a distinct construct that captures the informal, context-specific signals consumers use to assess seller credibility in institutional voids. These include:

- Community referrals (“My neighbor bought from them”),
- Religious signaling (use of Islamic greetings or Quranic verses),

- Linguistic localization (use of Hausa or local dialects),
- Endorsements by local influencers (e.g., imams, market leaders, youth corps members).

While not formally theorized in marketing literature, these cues draw on established theories: signaling theory (Spence, 1973) explains how observable traits (e.g., a religious greeting) signal unobservable qualities (e.g., honesty); social identity theory (Tajfel & Turner, 1979) suggests that shared identity markers (e.g., ethnicity, language) reduce perceived risk by fostering in-group affinity.

Crucially, however, existing studies treat these cues as contextual anecdotes rather than measurable predictors. For example, Okechukwu and Eze (2024) note the prevalence of religious signaling but do not test its effect size relative to other factors like perceived insecurity. Likewise, Meagher (2021) argues that ethnic and religious identity function as “trust proxies” in Nigeria’s moral economy but offers no operational definition for empirical testing.

This study addresses that limitation by developing and validating a multi-item scale for social verification cues—enabling direct comparison with conventional trust antecedents (e.g., platform security) and testing their relative influence in a high-risk setting.

#### **2.4. Research Gap and Theoretical Contribution**

The intersection of digital marketing, consumer behavior, and conflict remains critically underexplored. While digital trust theory explains behavior in stable environments, and institutional voids theory explains firm adaptation in fragile ones, no existing work has empirically bridged these domains from the consumer’s perspective.

Specifically, prior research fails to answer three interrelated questions:

- i. Do social verification cues statistically outweigh perceived insecurity in shaping digital trust?
- ii. Does digital trust mediate the link between seller engagement and purchase intention in conflict zones?
- iii. Can Western-derived marketing models be meaningfully applied when institutional foundations are absent?

#### **This study fills these gaps by:**

- Developing and validating a context-sensitive measure of social verification cues in Nigeria’s Northwest;
- Testing a full mediation model in which digital trust channels the effect of SME marketing engagement on purchase intention—a relationship unexamined in prior conflict-zone studies;
- Extending institutional voids theory from firm strategy to consumer behavior, thereby challenging the universality of technology acceptance models that assume institutional stability.

In doing so, the research moves beyond descriptive accounts toward a theory-driven, empirically grounded model of digital commerce in violently contested spaces. It not only advances scholarly understanding but also responds to urgent calls (e.g., Visconti, 2024; World Bank, 2023) for marketing theory that centers the realities of the Global South.

### **3. Methodology**

This study employed a sequential explanatory mixed-methods design (Creswell & Plano Clark, 2023), beginning with a quantitative phase to test hypothesized relationships among perceived insecurity, digital trust, social verification cues, and purchase intention, followed by a qualitative phase to contextualize and explain the statistical findings through consumer narratives. The target population comprised consumers aged 18–60 who had engaged in at least one purchase from a small or medium enterprise (SME) via digital channels (WhatsApp, Instagram, or SMS) in the past six months within Zamfara, Katsina, and Kaduna states—three of Nigeria’s most banditry-affected regions (ACLEDE, 2024). Using stratified random sampling by Local Government Area (LGA), the sample was proportionally allocated across high-, medium-, and low-risk zones based on ACLEDE’s 2024 violence intensity index, ensuring geographic and security-context representativeness. A total of 420 respondents (140 per state) were surveyed, a size determined via a priori power analysis (GPower 3.1) to achieve 80% power ( $\alpha = 0.05$ ) for

detecting medium effect sizes in structural equation modeling (Faul et al., 2022).

The instrument comprised validated multi-item scales: a 5-item Perceived Insecurity scale adapted from UNDP’s (2023) Socioeconomic Impact Assessment in Nigeria’s Northwest; a 4-item Digital Trust scale from Gefen et al. (2003); a newly developed 6-item Social Verification Cues scale (e.g., “I only buy if the seller is recommended by someone I know”); and a 3-item Purchase Intention scale from Dodds et al. (1991). A pilot test with 30 respondents in Minjibir, Kano, confirmed internal consistency (Cronbach’s  $\alpha > 0.82$  for all constructs). In the qualitative phase, six focus groups ( $n = 48$ ; balanced by gender and age) were conducted using purposive sampling to explore the cultural and contextual meanings of trust signals. Quantitative data were analyzed using Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) in AMOS 28 to test measurement and structural models, while qualitative transcripts underwent thematic analysis in NVivo 14, following Braun and Clarke’s (2022) reflexive approach and grounded theory principles (Charmaz, 2023). Ethical protocols adhered to trauma-informed research standards (UNHCR, 2024): informed consent was obtained verbally and in writing, anonymity was ensured through coding, and data collection—conducted between January and April 2025—was carried out by trained local enumerators via secure phone interviews and in-person sessions in low-risk

community hubs (e.g., markets, mosques, and youth centers), minimizing exposure to violence.

#### **4. Results and Discussion**

##### **4.1. Descriptive Statistics**

The study surveyed 420 consumers across Zamfara, Katsina, and Kaduna states. The majority were female (68%) and young adults aged 18–35 (72%), reflecting the dominant demographic of digital users within Nigeria’s informal economy (NCC, 2024).

WhatsApp emerged as the leading digital commerce platform (used by 89% of respondents), owing to its low data requirements and accessibility in bandwidth-constrained environments (World Bank, 2023). Instagram (32%) and SMS-based ordering (24%) served as supplementary channels, frequently combined with WhatsApp for sharing product visuals or confirming payments.

A striking 76% of participants reported either personally paying “protection fees” to armed groups or knowing someone who had—echoing ACLED (2024) and UNDP (2023) findings that extortion operates as a de facto tax in the region. This pervasive insecurity provides the context in which digital trust must be constructed and sustained.

statistically significant at  $p < 0.001$ :

##### **4.2. Hypothesis Testing: Structural Equation Modeling Results**

Structural equation modeling (SEM) was conducted using IBM SPSS AMOS 28, a covariance-based SEM (CB-SEM) software package suitable for theory-testing research with a sample size exceeding 200 and normally distributed latent constructs (Byrne, 2016; Kline, 2023). Prior to hypothesis testing, a confirmatory factor analysis (CFA) confirmed the measurement model’s validity, yielding excellent fit indices: CFI = 0.962, TLI = 0.951, RMSEA = 0.048 (90% CI [0.039, 0.056]), and SRMR = 0.037—well within recommended thresholds (Hu & Bentler, 1999).

The structural model (see Figure 1) tests four hypothesized relationships among perceived insecurity, social verification cues, digital trust, SME marketing engagement, and purchase intention. All constructs demonstrated strong internal consistency (Cronbach’s  $\alpha > 0.82$ ) and composite reliability (CR  $> 0.85$ ), with average variance extracted (AVE) values exceeding 0.50, supporting convergent validity. Discriminant validity was established via the Fornell–Larcker criterion and cross-loadings. As shown in Table 1, all hypothesized paths were

**Table 1. Structural Path Coefficients (Standardized  $\beta$ )**

Hypothesis	Path	B	P-value	Supported?
H1: Perceived insecurity $\rightarrow$ Digital trust	-0.41	<0.001	Yes	
H2: Social verification cues $\rightarrow$ Digital trust	0.58	<0.001	Yes	
H3: Digital trust $\rightarrow$ Purchase intention	0.63	<0.001	Yes	
H4: Digital trust mediates marketing engagement $\rightarrow$ Purchase intention	Indirect effect = 0.39, 95% CI [0.31, 0.47]	<0.001	Yes	

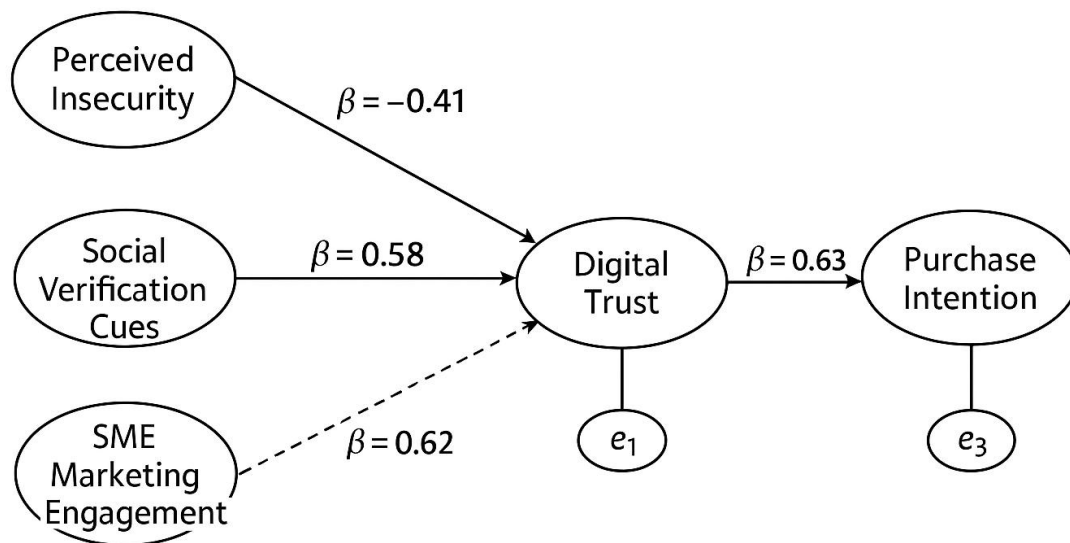
The model explains 54% of the variance in digital trust ( $R^2 = 0.54$ ) and 41% of the variance in purchase intention ( $R^2 = 0.41$ ), indicating substantial explanatory power in a high-risk context. The negative effect of perceived insecurity on digital trust (H1) confirms that chronic violence undermines consumer confidence in digital transactions. In contrast, social verification cues emerge as the strongest antecedent of trust ( $\beta = 0.58$ ), surpassing even platform familiarity or prior experience.

Critically, digital trust fully mediates the relationship between SME marketing engagement (e.g., responsiveness, product

updates via WhatsApp) and purchase intention (H4). The indirect effect (0.39) is significant via 5,000 bootstrap resamples, with a 95% confidence interval that excludes zero [0.31, 0.47], while the direct path becomes non-significant when trust is included—confirming full mediation.

Figure 1. Structural Model of Digital Trust and Purchase Intention in High-Risk Markets

The below figure displays the full path diagram with standardized coefficients, error terms, and the mediation pathway from SME marketing engagement  $\rightarrow$  digital trust  $\rightarrow$  purchase intention.



**Figure 1. Structural Model of Digital Trust and Purchase Intention in High-Risk Markets**

$p < 0.001$  for all paths.

These results collectively validate digital trust as the central mechanism enabling m-commerce functionality in institutional voids—despite pervasive insecurity. The strong predictive role of social verification cues further underscores that, in fragile contexts, trust is conferred through social legitimacy, not technological design.

#### 4.3. Qualitative Insights: The Social Architecture of Digital Trust

To deepen understanding of the mechanisms behind the SEM results—particularly the strong effect of social verification cues on digital trust ( $\beta = 0.58$ )—we conducted six focus groups (total  $n = 48$ ) across Zamfara, Katsina, and Kaduna between February and April

2025. Participants were recruited via stratified purposive sampling to reflect variation in gender (50% female), age (18–35: 70%; 36–60: 30%), and security exposure (high-, medium-, and low-risk LGAs per ACLED, 2024). Recruitment occurred through community gatekeepers (e.g., market union leaders, mosque committees, and youth corps officers) to ensure access and trust.

Each 90-minute session was moderated by trained local researchers (fluent in Hausa and English) using a semi-structured guide aligned with the quantitative constructs (e.g., “When do you feel safe buying from someone you’ve never met in person?”). Sessions were audio-recorded, transcribed verbatim, and translated where

necessary. Data collection continued until thematic saturation was reached—defined as no new codes emerging across three consecutive groups (Saunders et al., 2018).

Analysis followed Braun and Clarke’s (2022) reflexive thematic approach in NVivo 14. Initial open coding was performed independently by two researchers, followed by collaborative development of a codebook. Inter-coder reliability was established using Cohen’s  $\kappa = 0.84$ , indicating strong agreement. Higher-order themes were iteratively refined through constant comparison and member-checking with local enumerators to reduce interpretive bias.

Three interrelated trust architectures emerged—not as isolated practices, but as contextual enactments of the social verification cues measured in the survey. Crucially, each architecture directly explains why these cues exert such strong predictive power on digital trust in the SEM model.

#### i. Community Vouching: Trust as Reputational Endorsement

Participants consistently deferred to local authority figures—imams, market leaders, and respected elders—as credible validators. In Gusau (Zamfara), a 28-year-old woman explained:

“If my mallam shares the seller’s number in our mosque group, I buy without asking

questions—he would not risk his reputation.”

This practice operationalizes the “community referrals” item in our scale (“I only buy if the seller is recommended by someone I know”). Notably, vouching was most prevalent in Zamfara, where formal institutions have nearly collapsed, and religious networks serve as de facto regulators. This aligns with the SEM finding that social verification cues offset insecurity—because trust is outsourced to third-party reputational capital.

#### ii. Religious Signaling: Morality as a Proxy for Reliability

Sellers who opened conversations with “Bismillah” or closed orders with “Alhamdulillah” were perceived as morally constrained against fraud. A 34-year-old male trader in Katsina noted:

“If he writes ‘Alhamdulillah’ after confirming my order, I know he fears Allah—so he won’t cheat me.”

This behavior directly corresponds to the “religious signaling” dimension of our scale. Younger respondents (18–35) and women placed greater emphasis on this cue, reflecting gendered and generational reliance on moral economy frameworks (Okechukwu & Eze, 2024). Critically, this explains why technical trust signals (e.g., “verified” badges) are distrusted: in a context where identity is performative and moral, algorithmic verification lacks social meaning.

iii. Local Identity Markers:  
Embeddedness as Credibility

References to hyperlocal landmarks (“near Danbatta market”), use of Hausa phrases, or ethnic identifiers (“Fulani seller from Zurmi”) significantly enhanced perceived legitimacy. Generic English-only posts, by contrast, triggered suspicion—a finding most pronounced in Kaduna, where ethnic tensions heighten scrutiny of outsider sellers. This validates the “linguistic localization” item in our scale and demonstrates how geographic and cultural proximity reduces perceived risk.

**Integration with Quantitative Findings**

These qualitative insights directly explain the statistical dominance of social verification cues ( $\beta = 0.58$ ) over platform-based signals. While the SEM confirms that these cues drive trust, the focus groups reveal how: through institutional substitution. In the absence of courts or consumer protection, trust is delegated to mosque networks (Zamfara), moral codes (Katsina), and ethnic-territorial belonging (Kaduna).

Moreover, the qualitative data clarify why perceived insecurity erodes trust ( $\beta = -0.41$ ): not because consumers reject digital tools, but because violence disrupts the very social networks (e.g., closed

markets, displaced elders) that enable vouching. Thus, insecurity weakens trust indirectly—by fragmenting the social infrastructure on which verification depends.

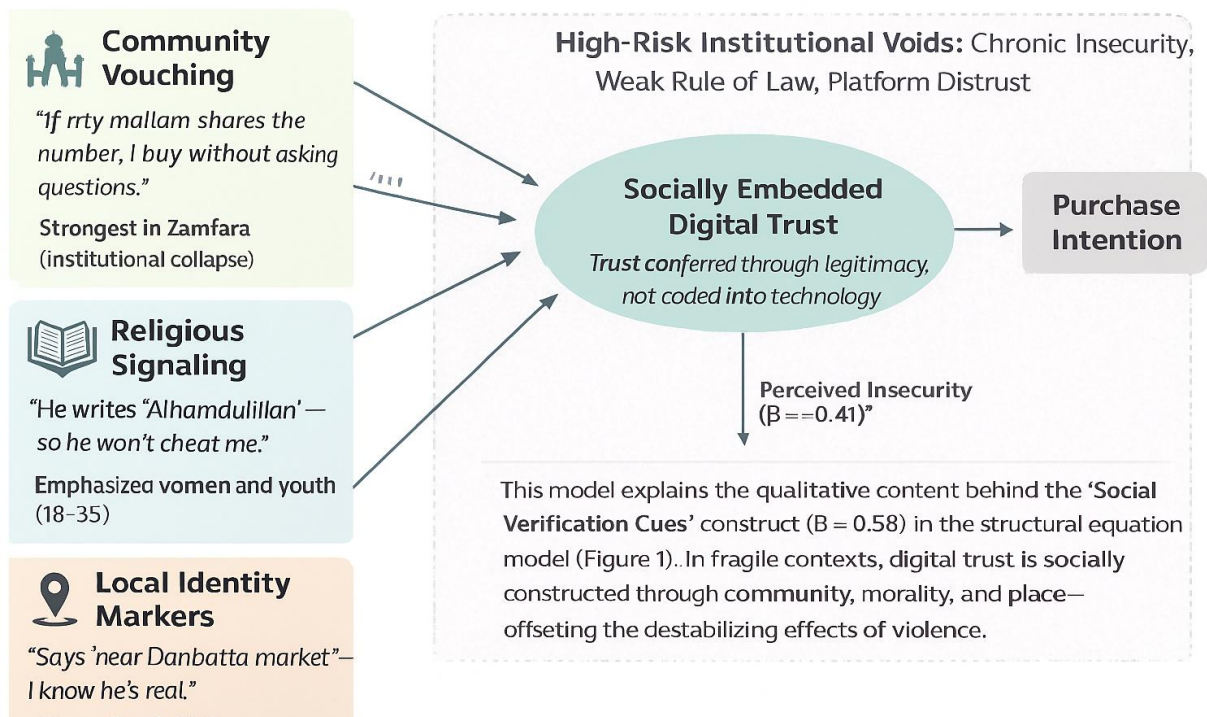
**Conceptual Model: The Social Architecture of Trust**

To synthesize these dynamics, Figure 2 presents a conceptual model linking informal mechanisms to digital trust. It shows how community vouching, religious signaling, and local identity markers—shaped by local institutional voids—converge to form socially embedded digital trust, which then enables purchase intention. This model visually reinforces the SEM mediation path (SME engagement  $\rightarrow$  trust  $\rightarrow$  purchase) by revealing the cultural and relational content of “trust” in high-risk markets.

Figure 2. The Social Architecture of Digital Trust in Northwest Nigeria

The below figure depicts three input streams—Community Vouching, Religious Signaling, Local Identity Markers—converging into a central “Socially Embedded Digital Trust” node, which then feeds into “Purchase Intention.” Contextual modifiers—e.g., “State-Level Institutional Void Severity”—would moderate each input.

**Figure 2. The Social Architecture of Digital Trust in Northwest Nigeria**



The qualitative phase does more than illustrate—it theorizes the mechanism: in fragile contexts, digital trust is not a psychological state alone, but a socially distributed judgment anchored in legitimacy, morality, and place.

#### 4.4. Theoretical Implications

These findings broaden digital trust theory by emphasizing its contextual and relational foundations. Traditional models (Pavlou, 2003) conceptualize trust as a derivative of system quality and perceived security. In contrast, this study demonstrates that under conditions of chronic insecurity, trust hinges on social verification—a form of informal institutional substitution (Khanna & Palepu, 2010).

By applying institutional voids theory to consumer behavior, the research bridges entrepreneurship and marketing scholarship in fragile contexts (Al-Hariri & El-Sakka, 2023; Adeyemi & Ogunleye, 2024). It challenges the universality of technology acceptance models, revealing that perceived usefulness is mediated by perceived safety and social legitimacy, not merely interface design.

In doing so, the study contributes to a growing Global South perspective in marketing theory, foregrounding informality, moral economy, and relational trust as central to consumer decision-making (Visconti, 2024).

## **5. Conclusion and Recommendations**

This study concludes that in Nigeria's banditry-affected Northwest, digital trust is not constructed through platform security features or algorithmic assurances, but through deeply embedded social verification mechanisms. While chronic insecurity significantly undermines consumer confidence in digital transactions—as evidenced by the strong negative effect of perceived insecurity on trust ( $\beta = -0.41$ ,  $p < 0.001$ )—consumers actively reconstruct credibility through community vouching, religious signaling, and local identity markers. These informal institutions enable mobile commerce (m-commerce) to function despite the collapse of formal market-supporting structures. Most critically, the study empirically confirms that digital trust fully mediates the relationship between SME marketing engagement and purchase intention (indirect effect = 0.39, 95% CI [0.31, 0.47]), establishing trust as the linchpin of digital market viability in fragile contexts. These findings extend institutional voids theory (Khanna & Palepu, 2010) into the domain of consumer behavior and challenge the universality of Western-centric digital marketing models that assume institutional stability (Visconti, 2024; Al-Hariri & El-Sakka, 2023).

### **Evidence-Based Recommendations**

To SMEs in Northwest Nigeria:

- Integrate social proof into digital outreach: Actively solicit and display testimonials from respected community members (e.g., imams, market leaders,

youth corps officers). As focus group participants affirmed, a seller endorsed by a mallam is deemed trustworthy by default (Okechukwu & Eze, 2024).

- Localize communication: Use Hausa language, local slang, and references to nearby landmarks (e.g., “near Faskari Central Mosque”) rather than generic English messaging. This signals embeddedness and reduces perceived risk (Meagher, 2021).

To Fintech and Telecom Companies (e.g., MTN, Airtel, Opay, Palmpay):

- Co-develop “Community-Verified Trust Badges”: Partner with traditional institutions (e.g., Emirate Councils, Market Unions) to issue digital seals (e.g., “Verified by Katsina Traders Association”) that appear on WhatsApp Business profiles or USSD menus. Such badges leverage existing social capital, aligning with World Bank (2023) calls for “hybrid trust infrastructures” in fragile economies.

- Implement voice-based verification systems: Given that 42% of adults in Northwest Nigeria have limited literacy (NBS, 2024), audio-based authentication (e.g., voice PINs, spoken confirmations) can enhance inclusion and reduce fraud.

**To State Ministries of Commerce (Katsina, Zamfara, Kaduna) and SMEDAN:**

- Establish Community-Linked Digital Seller Registries: Collaborate with local government councils and traditional rulers

to create verified directories of SMEs, accessible via USSD or community noticeboards. This builds on UNDP's (2023) recommendation to "formalize the informal" through locally legitimate channels.

- Integrate "Digital Trust Literacy" into SME training: Move beyond technical digital skills to teach entrepreneurs how to signal trustworthiness through culturally resonant cues—mirroring successful models in Afghanistan and Colombia

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## ANALYZING THE LOGISTICS AND SUPPLY CHAIN PROCESSES IN PORTS AS A PERFORMANCE LEVER FOR NIGERIAN CEMENT AND ALLIED INDUSTRIES

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### **Abstract**

*This study investigates how logistics and supply chain processes at Nigerian ports affect the production and profitability of cement and allied products. Key factors examined include port-to-factory transport costs, distances, administrative clearance costs, and time spent at seaports. Using a longitudinal survey of 90 Nigerian Exchange-listed companies between 2010 and 2019 (with 66% response rate), multiple regression analysis was conducted in SPSS. Findings show that port-to-factory transport costs and distances have a strong positive impact on profitability ( $\beta=0.475$  and  $\beta=0.641$ ), explaining 72.2% of profit variation. Conversely, administrative clearance costs and time have only marginal effects on profits ( $\beta=0.006$  and  $\beta=0.188$ ). The results indicate that while customs procedures minimally influence profits, transport efficiency from port to factory significantly drives financial performance. The study highlights the importance of optimizing inland logistics and port-centric supply chains, suggesting that improving transport networks can transform inefficiencies into a sustainable competitive advantage for Nigerian cement manufacturers.*

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**Keywords:** Logistics, supply-chain processes in ports, administrative clearance, transport, business profit.

### **1. Introduction**

Supply chain management (SCM) refers to the coordinated management of the flow of goods, services, and information from the sourcing of raw materials through production and distribution to final delivery to customers. It encompasses key activities such as procurement, inventory control,

manufacturing, warehousing, distribution, shipping, port operations, customs clearance, and customer service management. Effective SCM emphasizes functional integration, stakeholder collaboration, real-time cargo monitoring, and sustained investment in logistics infrastructure. Empirical evidence indicates that SCM practices have a

significant effect on supply chain and firm performance, explaining approximately 48.73% of performance variance (Aradhana et al., 2017).

Doan (2020) and Lee (2021) report that efficient supply chain strategies substantially enhance the financial performance of small and medium-sized enterprises, improving revenue, profitability, and organizational capabilities. Similarly, Oni and Ojekunle (2022) and Mbachu et al. (2024) demonstrate that effective supply chain operations—particularly cargo handling efficiency, vessel scheduling, and customs clearance—play a critical role in reducing delays and logistics costs within port environments. The adoption of advanced supply chain technologies, such as blockchain applications and terminal operating systems, further enhances port efficiency and operational transparency (Hokey et al., 2017; Min et al., 2017). Collectively, these findings establish a strong correlation between port-based SCM practices and business efficiency. However, the implications of this relationship remain underexplored in the context of Nigerian cement companies and allied industries.

Cement and allied products are central to growth and development in Nigeria's manufacturing-oriented economy. Industry forecasts project annual growth of approximately 3.2%, with market value expected to reach US\$3.42 billion in 2024 and a compound annual growth rate of 3.3% between 2024 and 2028. Cement

output is projected to increase from US\$3.31 billion in 2023 to US\$3.89 billion by 2028 (West African Business Journal, 2025). Despite this growth trajectory, studies by Igwe et al. (2013), Adebayo and Aworemi (2021), and Oni et al. (2025) identify persistent logistics challenges—including inadequate infrastructure and complex regulatory frameworks—that hinder industry expansion and competitiveness.

Industry stakeholders have repeatedly highlighted the cost implications of weak logistics systems. In 2018, Abdul Samad Rabi, Chairman and CEO of BUA Group, warned that deficient transportation networks significantly erode profit margins and raise supply chain costs. His analysis revealed that cement transportation costs exceeded ₦14,000 per ton, representing over one-third of total production costs. By July 2024, transportation costs were projected to increase to between ₦45,000 and ₦50,000 per ton, depending on route conditions and operational factors (The Nation Newspaper, July 22, 2025). As of January 2026, rising fuel prices and logistics inefficiencies suggest that transportation costs have likely surpassed these estimates, with the average wholesale price reaching approximately ₦6,000,000 per trailer load (Ezeh, 2026). An efficient logistics network is therefore essential for the timely movement of raw materials and finished products, cost reduction, and overall operational efficiency (Oni et al., 2025).

Port-related supply chain management in Nigeria is significantly affected by clearance costs, clearance time, transportation between seaports and industrial locations, and the distance between ports and production sites. Evidence from Nwokedi et al. (2021) and Oni et al. (2024) indicates that cargo clearance in Nigerian ports is approximately 30% more expensive than in neighboring countries and takes an average of 18–21 days, compared to 5–7 days in Ghana and about 4 days in Cotonou (The Nation, October 31, 2025). Bureaucratic bottlenecks, including slow customs procedures and excessive documentation requirements, have been identified as major contributors to clearance delays (Oni & Ojekunle, 2022). In addition, congestion around major ports—particularly in Lagos—results in extended transit times and increased transportation costs. Studies consistently identify poor port infrastructure, multiple charges, and congestion-related delays as major obstacles to efficient shipping and logistics operations in Nigerian seaports (Nwokedi et al., 2021).

A substantial body of literature underscores the importance of SCM in enhancing industrial performance by optimizing the utilization of key inputs such as raw materials, labor, and capital (Kongkiti, 2013; Rajen, 2020; Akanbi, 2024). Kongkiti (2013) emphasizes that transportation costs of raw materials are as critical as acquisition costs, noting that neglecting logistics expenses can significantly inflate overall production

costs. Rajen (2020) argues that competitive advantage increasingly derives from efficient supply chains that reduce purchasing, production, and operational costs. Similarly, Akanbi (2024) notes that effective supply chain management improves customer satisfaction by ensuring efficient and reliable logistics throughout the production process.

Although SCM is essential for international trade and the smooth flow of goods through ports (Mbachu et al., 2024), port-related supply chain processes remain insufficiently examined in existing literature. A clearer understanding of port-centric SCM practices can help firms optimize operations, reduce costs, and enhance service quality. For Nigeria's cement and allied industries, efficient port logistics may significantly improve performance and strengthen competitiveness in regional and global markets. To address this gap, the present study investigates the impact of supply chain management practices—particularly port logistics processes—on the performance of Nigeria's cement and allied industries.

This study is structured into five sections. Section One presents the background and motivation for the research. Section Two reviews relevant literature and examines the relationship between port logistics, supply chain processes, and cement and allied product production in Nigeria. Section Three outlines the research methodology. Section Four discusses the

empirical findings, while Section Five concludes the study and offers practical policy and managerial recommendations.

## **2. Literature Review**

### **2.1. Logistics and Supply-Chain Processes in Ports and their Impact on Cement and Allied-Product Manufacturing**

The cement industry is widely recognized as a heavy-material sector that depends on bulky, low-value raw materials such as limestone, gypsum, and coal, which are often sourced from geographically distant locations. Consequently, the logistics involved in transporting these raw materials and finished products—including cement and clinker—through seaports and across supply chain networks play a critical role in determining production costs, product quality, and environmental sustainability. Ports are therefore strategically important to cement manufacturers, as they facilitate the importation of essential inputs, particularly for plants located in regions with limited access to high-quality limestone. In addition, ports serve as export gateways for surplus clinker and cement, enabling firms to access distant markets during periods of domestic oversupply or weak regional demand. This interdependence underscores the strong linkage between port logistics efficiency and the performance of the cement industry, as well-connected ports can convert surplus output into revenue rather than incurring storage and demurrage costs.

Empirical studies consistently demonstrate a strong relationship between logistics efficiency, port-based supply chain processes, and firm performance. Aniki, Mbohwa, and Akinlabi (2014) examined logistics and supply chain practices in Nigerian cement factories and identified several operational constraints and improvement opportunities. Using structured questionnaires, the study found that approximately 73% of firms rely predominantly on road transportation for product distribution, reflecting limited modal diversity. The authors also highlighted the deterioration and obsolescence of railway infrastructure resulting from prolonged neglect and poor maintenance, recommending renewed investment in rail systems to enhance logistics efficiency, although such investments may be financially burdensome for individual firms.

Hooshang et al. (2014) investigated the impact of supply chain integration on the financial performance of Swedish manufacturing firms. Drawing on a literature-informed survey instrument refined through expert validation, the study revealed that supply chain integration at all levels positively influences financial performance, with fully integrated firms achieving superior outcomes. The findings emphasize the practical importance of supply chain integration for production managers operating in increasingly competitive global markets.

Similarly, Aradhana et al. (2017) assessed the effects of supply chain management practices (SCMPs) on supply chain performance (SCP) and firm performance (FP) within India's organized retail sector. Using data from 125 supply chain executives, the authors developed and tested a conceptual model through mediating multiple regression analysis. The results indicate a significant positive relationship among SCMPs, SCP, and FP, with customer and supplier relationship management emerging as the most influential practices. However, the study relied primarily on perceptual performance measures, suggesting the need for future research incorporating objective indicators such as profit margins and sales growth.

Earlier studies by Adejugbe (1970) and Uche et al. (2017) examined the price and income elasticities of demand for cement in Nigeria, including both imported and domestically produced cement. Using the least squares estimation method, the studies found that cement demand is generally price inelastic, with both aggregate and imported cement exhibiting low and variable price elasticity. While aggregate cement demand showed income elasticity, imported cement demonstrated low-income elasticity, reflecting increasing import substitution. The studies further revealed that customs tariffs had minimal influence on imported cement demand and that cement consumption increased at a declining rate of approximately 2%, although overall

consumption trends continued upward over time.

Lee (2021) explored the impact of supply chain management strategies on the operational performance of Korean small and medium-sized enterprises, with particular emphasis on organizational competencies. Based on a survey of 300 manufacturing SMEs, the study found that specific SCM strategies significantly improve operational performance and strengthen organizational competencies. Although these competencies mediated the relationship between SCM strategies and operational performance, they did not mediate financial performance. The findings suggest that aligning SCM strategies with internal organizational capabilities is essential for achieving sustainable performance outcomes.

Abdullahi et al. (2024) examined the cost and environmental challenges associated with cement production, highlighting its energy-intensive nature and environmental footprint. The study reported that cement production consumes approximately 15% of total industrial energy, requiring about 3.4 GJ of thermal energy and 110 kWh of electrical energy per ton under the dry process method. In Nigeria, energy costs account for between 40% and 50% of total cement production costs, posing significant threats to sustainability and profitability. The study also noted that cement production contributes approximately 5% of global greenhouse gas emissions and generates substantial solid waste, with projections

estimating global solid waste generation could reach 3 billion tonnes by 2025. These environmental and cost-related challenges have constrained investment in new cement plants in Nigeria.

More recently, Kattey et al. (2025) investigated the relationship between perpetual inventory systems and the performance of cement manufacturing firms in South-South Nigeria. Using an explanatory survey design and a census of five cement companies, the study collected data from 30 respondents through a semi-structured questionnaire based on a five-point Likert scale. Analysis using descriptive statistics and Spearman's rank-order correlation revealed that perpetual inventory management significantly predicts supply chain performance. The authors recommend adopting perpetual inventory systems to improve decision-making, maintain optimal stock levels, professionalize purchasing processes, and enhance customer satisfaction, thereby strengthening overall supply chain performance.

### **3. Methodology**

#### **3.1. Data and Sources**

This study examined cement and allied product manufacturing firms operating in Nigeria, categorized as industrial goods producers, including manufacturers of

cement and foam products. A longitudinal survey research design was adopted to assess the impact of logistics and supply chain processes within Nigerian ports on the production of cement and allied products. The study population comprised 90 firms listed on the Nigerian Exchange Group (NGX) between 2010 and 2019, of which 60 firms, representing a 66% response rate, successfully completed the survey. Data collected were analyzed using multiple regression techniques with the aid of SPSS.

Specifically, the study analyzed the influence of key port-related logistics and supply chain variables including transportation costs to production facilities, distance between ports and factories, administrative clearance costs, and port processing time—on the profitability of cement and allied product manufacturing firms in Nigeria.

### **3. Analysis of the Logistics and Supply Chain Variables and Profit of Cement and Allied Products Producing Businesses**

This section details the estimation results on how logistics and supply chain variables affect the profits of cement and allied product businesses, including descriptive statistics, model summary, and an analysis of variance related to the regression coefficients.

**4.1 Effect of Logistics and Supply Chain Variables on Cement and Allied Products Producing Businesses**

**Table 4.1.1 Descriptive Statistics**

	Mean	Std. Deviation	N
Profit	31355886416.55	25307518202.019	60
ClearCost	824.58	449.423	60
ClearTime	84.00	27.059	60
TransportCost	532.50	230.884	60
Distance	104.1667	37.77909	60

a. Business = Industrial Goods

The descriptive statistics of the cement and allied products producing business are presented in Table 4.1.1. The cement and allied products producing business' profits have a yearly average of ₦31,355,886,417 (approx.), clearance cost has a yearly average of ₦824,580, clearance time has an average of 84 hours per clearance, the transport costs from port to factory has a

yearly average of ₦532,500,000, while the distance between port and factory has an average of 104.167km. These figures give a basic understanding of the time and resources that cement and allied products producing business invest on logistics, which may have an impact on their profits.

**Table 4.1.2 Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.850 <sup>b</sup>	0.722	0.702	13813115148.560

a. Business = Industrial Goods

b. Predictors: (Constant), Distance, ClearCost, TransportCost, ClearTime

Table 4.1.2 presents the model summary results. The combined logistics and supply chain variables—particularly administrative clearance processes and port-to-factory transportation—exhibit a strong positive relationship with profitability in the cement and allied products sector, with a correlation coefficient of  $r = 0.850$ . The model

explains approximately 72.2% of the variation in business profits ( $R^2 = 0.722$ ).

While other factors not captured in the model may account for the remaining variation, these results indicate that logistics and supply chain variables exert a substantial influence on the profitability of cement and allied product manufacturing firms in Nigeria.

**Table 4.1.3 Analysis of Variance**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	27293639919	4	68234099798	35.762	0.000 <sup>c</sup>
		27955300000		19888000000.		
		0.000		000		
	Residual	10494118255	55	19080215010		
		90543000000		7371470000.0		
		0.000		00		
	Total	37787758175	59			
		18498000000				
		0.000				

a. Business = Industrial Goods

b. Dependent Variable: Profit

c. Predictors: (Constant), Distance, Clear Cost, Transport Cost, Clear Time

Table 4.1.3 presents the analysis of variance (ANOVA) results. The model significantly explains the impact of administrative clearance processes and port-to-factory transportation on the profitability of cement and allied product manufacturing firms, with statistical significance at  $p < 0.001$ .

The results further indicate that the independent logistics and supply chain variables—including transportation costs, distance between ports and factories, administrative clearance costs, and time spent in seaports exert a significant influence on the profits of cement and allied product businesses.

**Table 4.1.4 Regression Coefficient**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-	404663713		-1.374	0.175
		556014331	99.054			
		10.682				
	ClearCost	324694.553	4710169.70	0.006	0.069	0.945
			6			
	ClearTime	175884713.	256080996.	0.188	0.687	0.495
		692	516			
	TransportC ost	52115260.4	11919611.4	0.475	4.372	0.000
		54	78			
	Distance	429113904.	184155739.	0.641	2.330	0.023
		981	702			

a. Business = Industrial Goods

b. Dependent Variable: Profit

The regression analysis reveals that administrative clearance processes, measured in terms of cost ( $p = 0.945$ ) and time ( $p = 0.495$ ), do not exert a statistically significant influence on the profitability of cement and allied product manufacturing firms, as both values exceed the 5% significance threshold. The standardized coefficients further confirm this weak relationship, with clearance cost ( $\beta = 0.006$ ) and clearance time ( $\beta = 0.188$ ) exhibiting minimal explanatory power. These findings suggest that variations in administrative clearance costs and processing time have little or no direct effect on firm profitability.

In contrast, port-to-factory transportation variables demonstrate a strong and positive relationship with profits. Transportation cost ( $\beta = 0.475$ ) and distance between port and factory ( $\beta = 0.641$ ) both significantly influence profitability, indicating that firms operating over longer distances and incurring higher transport costs tend to record higher profits. This relationship suggests that higher transport costs may reflect broader market access, improved logistics coordination, or stronger distribution networks that ultimately translate into increased sales volumes and revenue.

## **5. Conclusion and Recommendations**

### **5.1 Conclusion**

This study examined the impact of logistics and supply chain processes at Nigerian ports on the performance of

cement and allied product manufacturing firms. The findings confirm that logistics-related variables, particularly port-to-factory transportation factors, play a significant role in shaping firm profitability. The combined predictors of administrative clearance processes and inland transportation exhibit a strong positive association with profits in the cement and allied products sector.

However, disaggregated regression results reveal that administrative clearance variables—namely clearance cost and clearance time—have only marginal and statistically insignificant effects on profitability. Although these variables display positive coefficients, their limited influence suggests that customs-related costs and delays function largely as fixed and predictable overheads for firms. This outcome aligns with earlier findings on the price inelasticity of cement demand in Nigeria (Adejugbe, 1970), where firms are able to pass clearance-related costs onto consumers without experiencing a significant reduction in demand.

Conversely, port-to-factory transport variables emerge as key profitability drivers. Transport cost and distance show strong positive relationships with profits, implying that firms capable of serving distant markets can generate revenues that outweigh the associated logistics costs. This relationship highlights the strategic importance of market reach and distribution capacity within the cement supply chain. Firms operating over longer distances may benefit from higher ex-

factory prices, limited competition in remote markets, or more efficient haulage arrangements.

Notably, the positive association between higher transport costs and profits suggests the presence of structural inefficiencies within Nigeria's inland logistics network. While such inefficiencies currently allow firms to charge logistics premiums, they also signal systemic weaknesses that may constrain long-term competitiveness. These findings underscore the need for both firm-level logistics optimization and broader policy interventions aimed at improving transport infrastructure.

Overall, the results indicate that while customs clearance processes represent largely unavoidable costs with limited profit implications, inland logistics efficiency remains central to enhancing profitability and competitiveness in Nigeria's cement and allied products sector.

### **5.2 Managerial Recommendations**

Based on the empirical findings, the study recommends the following managerial actions:

- I. Firms should renegotiate inland freight contracts to prioritize lower per-tonne transportation costs rather than total haulage distance, as reduced unit costs directly enhance profit margins regardless of distance.
- II. Investment in logistics visibility tools, such as GPS tracking and telematics, can improve asset utilization, reduce empty return

trips, and transform rising transport costs into operational savings.

- III. Cement manufacturers should consider port-based value-added services, including bagging, blending, and short-term storage, to improve margins without increasing customs-related costs.
- IV. Firms should expand regional and cross-border distribution strategies to capitalize on the positive distance-profit relationship and access higher-value markets.

### **5.3 Policy Implications**

The findings also present important implications for policymakers:

- I. Priority should be given to improving inland transport infrastructure, particularly rail corridors such as the Kaduna-Abuja and Lagos-Ibadan routes, to reduce per-tonne transport costs and enable firms to serve wider markets efficiently.
- II. Customs reforms should focus on transparency, integrity, and the reduction of rent-seeking behavior rather than solely accelerating clearance speed, given the limited profit sensitivity to customs time and cost.
- III. Government incentives, such as tax reliefs or reduced track-access charges, should be introduced to encourage modal shifts toward rail freight, thereby lowering logistics costs and reducing environmental impacts.

- IV. The development of port-based logistics parks with shared storage, bagging, and distribution facilities can generate economies of scale, reduce inland transport burdens, and minimize inventory-holding costs.

#### 5.4 Directions for Future Research

Future studies should decompose transportation costs into key components—such as fuel, labor, vehicle depreciation, and inventory-holding costs—to determine whether profit gains stem from operational efficiency or

market expansion. Further research could also conduct elasticity analyses of regional cement prices to assess whether profitability increases arise from price discrimination or higher sales volumes. Extending the model to other Nigerian ports, including Calabar and Port Harcourt, would help validate the distance–profit relationship under varying infrastructure conditions. Finally, a longitudinal panel data approach spanning multiple fiscal years would provide deeper insights into the short- and long-term effects of logistics improvements on firm profitability.

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**MODERATING ROLE OF NETWORK CONVENIENCE ON THE  
RELATIONSHIP BETWEEN CUSTOMER SATISFACTION AND CUSTOMER  
LOYALTY IN ONLINE BUSINESS PRACTICE IN NIGERIA**

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**Abstract**

*Maintaining customer is one of the phenomena of great concern among marketers including online service providers in Nigeria. This has called for contributions towards guiding and directing concerned authorities on how to formulate effective marketing strategies that are viable for effective customer retention management. Upon this mandate, this paper has conceptualized a framework that explored the moderating role of network convenience on the nexus between customer satisfaction and customer loyalty in online business practice in Nigeria. The aim of this paper was to explore a conceptual framework that can serve as a convenient tool for accessing online buying and selling in Nigeria. This paper adopted a literature review method for synthesizing several views and ideas relating to service marketing models. This paper concluded that effective network convenience can strengthen the relationship between customer satisfaction and customer loyalty in online business practice in Nigeria. The paper recommended that online service providers should put hands on deck to see that their customers are properly satisfied so that they can remain loyal to their businesses.*

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**Keywords:** exploring; convenience; nexus; framework; satisfaction; loyalty.

**Introduction**

One of the significant issues in Nigeria's online business practice today is customer loyalty. This is due the fact that almost all companies have concern on, and worried about exploring ideas or strategies on how to manage customers as the important

visitors to their businesses. But the issue here is not only managing customer, but acquiring them. Yudiana and Setiani (2023) stressed that managing customers to stay is a key to the company's success, considering that retaining customers is more effective than finding new ones.

Similarly, customer loyalty has not caged only in a local market, but to the international reach because the advent of globalization and widespread of information technology has changed the barrier of location, time and of course, distance between companies and their customers in terms of buying and selling of goods and services. This has been posited by Ilyasu and Hussaini (2024) that this change has eliminated distance in boundaries, and reduces the differences between urban and rural areas. Time differences, location distances, as well as heterogeneity of population characteristics are no longer obstacles in the speed of information dissemination. This has clearly described the importance and positive effect of acquiring and maintaining customers in both local and international wise.

Contrarily, the report released by the Nigeria Telecommunications Commission (2023) asserted that lack of access to network has been a serious challenge that sets aside to diminish the efforts mounted by government and individuals, including online service providers because most of the online customers normally complain about lack of access to qualitative network which may result to incessant loss of customers at a time Thus, it is pertinent to stress the problem of losing customers which seriously affect the growth and development of any business which online marketing practice is apparently inclusive. There is a growing churn among online customers as it was stressed by Ilyasu (2025) that an increased rate churn-prone

rate among online subscribers can be reflected from inconveniencies in using network service, customer dissatisfaction, better offers from competitors, or external factors like economic downturns, high rate of taxation policies, high cost of maintenance, vandalizing network infrastructure, insecurity issues, etc. This situation might simply affect the smooth running of the subscription companies, which will lead to a serious lose of significant number of customers as well market share in which their main goal is always targeting how to acquire and maintain customers at all the times. By summing these issues together, online subscription companies can therefore, study and understand how to come up with effective, accessible and reliable network so that customer loyalty can easily be enhanced.

Besides, customer satisfaction can be attained when some factors are met. For instance, pricing strategy in online marketing can be competitively set so that customers can have full patronage on the product. Daily Trust (2021) posited that many times, service industries are forced to pursue such objectives as pricing to meet competition in order to stay in business and maintain its market share. Lancaster et al. (2002) reported that organizations may try to meet up with competition by reducing prices or even prevent it by adopting what is called “follow the leader” policy or leading price (a policy whereby an organization set a price based on the leading competitor’s price). Similarly, customer relation can be

another tool for enhancing satisfaction in online business activities as it was recommended by Chungu and Phiri (2024) that with rapidly evolving customer expectations and technological advancements, banks must invest in robust customer relationship strategies to retain existing customers and attract new ones. This entails more than just providing quality products and services; it requires a concerted effort to build strong and lasting relationships with customers.

Furthermore, customer satisfaction can be achieved when customer expectation; perception as well as adequate service differentiation are properly put in place by the online service marketers because what customer expect is benefit, and during post-usage stage, he perceives the reality of what he expects from the assessment or evaluation he has on the product or service he consumes. This is true about service differentiation in online marketing because the way company thrives in making its product to be unique in terms of features and performance, that is how customers are always developing habit of repeat purchase since they are really satisfied with the improvement such company has mounted in place for their satisfaction. Various studies have demonstrated the positive relationship between customer satisfaction and loyalty (Flint et al., 2011). Satisfied customers responded by voluntarily promoting the products and services they experienced to third parties (e.g., family, friends, and others) who sought their advice. Positive word-of-mouth is a strong representation

from customers and is expected to enhance the manufacturer's image (Shibuya et al., 2022). This has clearly indicated that there is strong relationship between customer satisfaction and customer loyalty which some prior studies such as: (Nawang, et al. 2024; Tufantoz & Yıldız, 2022; Hossain, et al. 2023; Saricam, 2022; & Ikawidajaja, 2023) have confirmed. On the other hand, studies such as: (Nathannia & Fachira, 2025; Denni, et al., 2024; Denni, et al., 2024; Basavaraj, et al., 2024; & Ahmed, et al., 2023) have found that there is no positive and significant relationship between customer satisfaction and customer loyalty.

Consequently, the results above have proven that there is inconsistency on the relationship between customer satisfaction and customer loyalty which opens a wide gap for literature contribution; therefore, this study is set to fill the gap by examining the moderating role of network convenience on the relationship between customer satisfaction and customer loyalty in online business practice in Nigeria.

## **Conceptual Issues**

### **Customer Loyalty**

Customer loyalty has been conceptualized by several marketing scholars whom have offered different views about its meaning and how it relates to service marketing (Ilyasu et al., 2025). It is defined as Customer loyalty is one of the concepts that receive the attention of practitioners as well the academicians in today's global

competitive village. Even though, the study conducted by Dandis, et al. (2023), argued that research on customer loyalty in service industries is a relatively unexplored area. Despite its situation, different scholars have tried to give it definitions and conceptual significance, for instance, Budur and Poturak (2021) defined customer loyalty as the cornerstone of the success of any organization and its integration with the rest of the other dimensions, as the process of customer retention is a very difficult issue due to changes in the psychology and behaviour of customers. Their study stressed the importance of customer loyalty towards organizational success in terms of growth and development. For any organization to achieve effective customer relationship management it must integrate the strategies of customer satisfaction and retention so that repeat purchase might take place; by so doing, a strong relationship customer and service would easily be established. Customer loyalty is conceptualized by Etuk, et al. (2024) as a cornerstone of business success, representing the willingness of customers to repeatedly purchase from a brand and advocate for it. Customer loyalty is the tendency of customers to constantly choose the products and services of a particular organization despite the presence of competitors in the market; in this case, the customer is loyal to this organization and is not affected by the offers and prices of other organizations (Joudeh et al., 2023; Khairawati, 2020). This profound the importance of

maintaining customers by the companies amidst competitors, when a customer inclined trust on a particular brand as a result of his experience of post usage, he can develop an emotional feelings and admiration towards that particular brand, and offers as well as pricing strategies of other competitors does not stop him from patronizing that product.

Based on the conceptual contributions offered by the above scholars, this study, therefore, defined customer loyalty as willingness, interest and preference of a customer to repurchase an online product or service consistently and recommend it to friends and relatives.

### **Customer Satisfaction**

The significance of customer satisfaction cannot be overemphasized. This is evidenced in various literature works conducted by different marketing scholars. Customer satisfaction is viewed customer satisfaction is the level of a person's feelings after comparing the perceived performance or results that are in accordance with his expectations (Juhria et al 2021). Marselin, Frederik and Fitty (2023) defined it as the level of a person's feelings after comparing the performance/results they have experienced with their expectations. Customer satisfaction is viewed by Melati and Tjokorda (2022) as an emotional response in the form of feelings of pleasure and relief because their desires have been fulfilled or fulfilled after purchasing an online product or service. Umar and Hapzi (2022) proposed that

customer satisfaction as feeling after comparing the service experienced with the expectations obtained from customer satisfaction obtained after the service is delivered. It is an evaluation that customers give to the company for the use of its products, where the product has been purchased or ordered online is called e-satisfaction (Lilik et al., 2024). It is an act of evaluating an online product or service by comparing it to the customers' expectations and assessing whether it fulfilled those expectations (Raza, et al. 2024). It is thought as an evaluation based on how well performance matches up with what was expected (Negassa & Japee, 2024).

Based on the above conceptualization, this study defines customer satisfaction as a relationship management which evaluates the behaviour of the customer in terms of expectation and perception of a particular commodity or service.

### **Network Convenience as a Proposed Moderating Variable**

Despite the fact that some service marketing scholars view network convenience as different from network service convenience, but for the purpose of this study, network convenience is viewed as network service convenience because online businesses is focused on how convenient a particular network service is. Therefore, network convenience was conceptualized as a moderating variable in some previous studies. Some of these studies include a work titled, "investigating the effect of

service quality on customer post-purchasing behaviours in the hotel sector: a moderating role of service convenience" conducted by Kuo-Cheng, et al (2012). Based on this assessment, network convenience is fit and suitable to be put as a moderating variable of the study.

### **Empirical Review**

Previous studies were conducted using the same variables, and in different places around the globe. For instance, the studies of Nawang, et al. (2024) examined service quality, brand image, customer satisfaction, and customer loyalty towards telecommunications service providers in Malaysia: a PLS-SEM approach. The findings of their study revealed that there was a significant relationship between customer satisfaction and customer loyalty. Another study conducted by Tufantoz and Yıldız (2022), who investigated the relationship between customer satisfaction and customer loyalty. Similarly, Hossain, et al. (2023) conducted their study on the relationship between customer satisfaction and customer loyalty in e-commerce. They confirmed that there is strong relationship between customer satisfaction and customer loyalty in e-commerce. Another supporting idea was confirmed by the study of Saricam (2022), who carried out on analyzing service quality and its relation to customer satisfaction and loyalty in sportswear retail market in Turkey. Thus, the study carried-out by Ikawidajaja (2023) viewed customer satisfaction and loyalty, where he found that there is strong relationship between

customer satisfaction and customer loyalty.

However, Nathannia & Fachira (2025) examined the influence of service quality, amenities, and value on customer satisfaction and customer loyalty at Bobocabin Cikole Bandung, Indonesia. The study found that there was no strong relationship between customer satisfaction and customer loyalty. In the same wing, Denni, et al. (2024) investigated the impact of SERVQUAL on consumers' satisfaction, loyalty, and intention to use online food delivery services. Findings of their study revealed that there was no strong relationship between customer satisfaction and customer loyalty. Thus, Basavaraj, et al. (2024) investigated the post-pandemic textile market: the stake of private labels in customer loyalty in Belagavi, North Karnataka in India. They also found that there was no strong relationship between customer satisfaction and customer loyalty. Similarly, Ahmed, et al. (2023) examined the intricate relationships of consumers' loyalty and their perceptions of service quality, price and satisfaction in restaurant service in Bangladesh. They also confirmed that there was no strong relationship between customer satisfaction and customer loyalty. Furthermore, the study of Naufal, et al., (2023) examined the influence of e-service quality dimensions on e-customer satisfaction and its impact on e-customer loyalty tiket.com in Indonesia. Findings of the study revealed that there was no strong relationship between customer satisfaction and customer loyalty.

Based on the empirical review conducted above, the results have shown inconsistency in their findings, and this is an uncovered gap for the direction of future studies, therefore, this study filled the identified gap by examining the moderating role of network convenience on the relationship between customer satisfaction and customer loyalty in online business practice in Nigeria.

### **Theoretical Underpinning**

This study is guided by the underpinning theory of Technological Acceptance (TAM) Model. This theory was developed by Davis (1989) and has added ingredients to the primary constructs of perceived benefits and perceived ease of use. The relationship between this theory and this present study is that, when online subscribers perceived a positive outcome of what they expect from getting access to internet, they will be satisfied with the company, and so they become loyal to the company in the long-run. The theory still postulated the assumptions that adopting technological system can provide some important advancements and convenience technology users, which can as well influence their behaviour.

TAM theory explains that these two primary constructs determine user acceptance of information systems (Wahyu & Fitriyani, 2021). The channel or link that interconnects this study and the TAM theory slants in the aspect of ease of use for the online users, as it is counted as one of the popular and most

widely concepts used by researchers and have positively impacted measuring individuals' confidence that using a particular technological aspect will be effort free and hitch free, such as when using internet subscription services, which can provide convenient access for the subscribers. This is relatively similar with the research conducted by (Hossain, et al., 2024), which found that the convenience is one of the key elements that shape the behaviour of the customer; convenient service offered did not create any difficulties simply by accessing network with hitch free endeavours. Thus, consumers can quickly implement it in payment transactions (Rahmawati & Murtanto, 2023). Assuming that the internet service is perceived by customer conveniently and accessible, customers will easily be motivated to admire, accept and of course, utilize the service, which can enhance customer satisfaction with

the company's cash free transaction experiences. Furthermore, based on the convenience in relation to online service ease, researcher attempted to re-examine and evaluate whether it remains the same or relevant variable when it comes to online service assessment in Nigeria. Therefore, the researcher utilized the convenience variable as moderator. If a large number of customers use convenient network service, they will assume that is easy to use, and it will boost or change their behaviour to satisfied and remain loyal ones.

Subsequently, the use of TAM theory can be an avenue for online users to accept what they expect based on their perception on online services through increasing their satisfaction and loyalty especially when they experience good and reliable network convenience.

**Proposed Conceptual Framework**

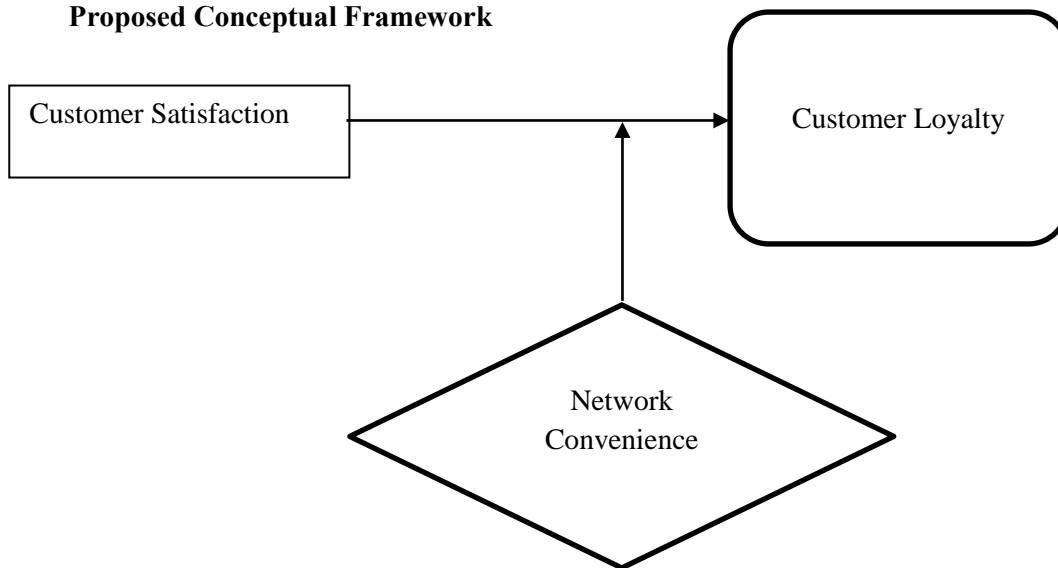


Figure 1: Proposed Conceptual Framework

### Proposed Hypotheses of the Study

This study has proposed the following hypotheses:

H<sub>1</sub>: There is significant relationship between competitive pricing and customer loyalty in online business practice in Nigeria

H<sub>2</sub>: There is significant relationship between customer satisfaction and customer loyalty through network convenience in online business practice in Nigeria

### Methodology

This study used qualitative research approach where relevant works including survey of documented literature works that embraced the concepts of customer satisfaction and customer loyalty were surveyed. The literature studies comprised of relevant data gathered from academic

journals, publications, and other relevant documents relating to concepts of customer satisfaction and customer loyalty, and how they are practiced in Nigeria.

### Conclusion

The study explored a proposed conceptual framework on the moderating role of network convenience on the nexus between customer satisfaction and customer loyalty in Nigeria's online business practice. After reviewing previous literatures that are related to the topic at hand, it is finally concluded that network convenience can serve as a suitable moderator on the relationship between customer satisfaction and customer loyalty in Nigeria's online business practice.

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